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VOLUME XXIII.

The Physician and Surgeon

A PROFESSIONAL MEDICAL JOURNAL.

JOHN WILLIAM KEATING, M.D.,
Editor and Owner.

FRANK BANGHART WALKER, M.D.,
Associate Editor.

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A PROFESSIONAL MEDICAL JOURNAL.

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ORIGINAL CONTRIBUTIONS.

LECTURES.

TUBERCULOSIS OF THE KNEE-JOINT AND OTHER CASES IN ORTHOPEDIC SURGERY.*

By DANIEL W. MARSTON, M. D., New York City.

INSTRUCTOR IN ORTHOPEDIC SURGERY IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; VISITING SURGEON TO THE DAISY FIELDS HOSPITAL FOR CRIPPLED CHILDREN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE first patient this afternoon is a typical case of the suppurative stage of tuberculosis of the knee. It presents many clinical features that we do not often see, except in the neglected cases from the crowded tenement districts. This boy is ten years old and has a tuberculous family history. The story of his present illness dates back sixteen months, when, while playing ball with his schoolmates, he received a fall which caused more or less lameness in the left knee. At the time of the accident the injury was regarded as trivial and the boy, although a little lame, was allowed to continue at school. In a few days, however, the symptoms increased in severity, the lameness was especially marked, and the little fellow complained of considerable pain, particularly at night. The usual routine treatment of blisters and poultices was then instituted, but without the least benefit to the patient. The knee gradually became much larger, the flexion more marked, and the boy was unable to straighten the limb. At this time he was taken to a clinic where the limb was enveloped in a plaster-of-Paris dressing and the mother instructed to bring the youngster back for further treatment in about two weeks. This dressing was continued intermittently for some months, but did not prevent the formation of an abscess in the joint, which was allowed to rupture spontaneously. The sinus that you now see has existed since the evacuation of the abscess cavity.

---

*Delivered at the New York Post-Graduate Medical School and Hospital, November, 18, 1900.

It is of the treatment of this kind of cases that I will speak particularly. The etiology and pathology is practically the same as that of hip disease about which I lectured last week. At first the treatment is of course largely prophylactic. If these cases are seen early in their history it is possible with proper care to avoid the extensive destructive changes present in this joint. The treatment is both constitutional and local, although too often one or the other of these is neglected. Constitutional treatment consists of plenty of good food, good air, cheerful environments and careful attention to the general health. Beefsteak, cream and eggs are better general tonics than cod-liver oil and creosote. These drugs, however, have their place in the treatment of these cases; too often to the exclusion of the more common dietetic agents. I have noticed in this hospital that after operations upon cases coming from the overcrowded sections of the city, if the little ones are returned to their tenement homes the disease often recurs and they are again seen at our dispensary, candidates for further operative treatment. If they are sent to our country hospital at Englewood they usually make a permanent recovery, which certainly proves the value of combining hygienic treatment with the mechanical and operative.

When a case of knee-joint disease comes to your office it is a good plan to first of all be sure of your diagnosis. The child's gait will teach you a great deal, as I have often showed you here. Having seen the patient walk, repeat to yourself mentally, at least, if not verbally, that magic combination of symptoms which will unlock the diagnosis of any case of joint disease. See how many there are present out of the eight:

(1) Pain.
(2) Heat.
(3) Swelling.
(4) Pain upon joint pressure.
(5) Limited motion.
(6) Atrophy.
(7) Muscular spasm.
(8) Deformity.

If you are able to detect any three of these symptoms you can rest assured of your diagnosis. Physiologic rest is an important factor in the treatment of these cases. Put the patient into bed. Apply extension to reduce the deformity caused by the muscular spasm. Direct your extension in the line of the deformity. You will recall what I said of lateral traction in the axis of the neck of the femur in the hip cases last week. In the case like the one now on the table, wherein the knee is considerably flexed, do not apply your extension to the leg and then simply throw the weight over the foot of the bed. By so doing you will create extension, it is true, but the patient will bitterly complain of the pain caused thereby. This is because you are making a fulcrum of the contracted hamstring tendons and with the tibia as a lever are creating intraarticular pressure. To apply the extension in the direction of the deformity it is best to put a hook into the ceiling and from it run a wide bandage behind the head of the tibia. This will lift the head of the bone forward, and will prevent the longitudinal traction over the footboard from creating the painful and destructive intraarticular pressure. Place pillows around the limb to protect it from the slightest jar.

A leg like this one will take an extension weight of four pounds, possibly increased to seven, and will require two weeks time at least to straighten. Apply the extension straps as in hip disease, but do not run them above the knee. When the deformity is overcome and there is present no muscular spasm, place the child on a large sheet of wrapping paper and trace an outline of the limb from the tuberosity of the ischium down along the inner side of the limb and around the sole of the foot and up the outer side of the leg to half an inch above the trochanter major. Take the circumferential measurements at the groin and just above and below the knee. Send these measurements here and a brace like the one my assistant will show you is made. This is known as the Thomas knee-brace. THOMAS, of Liverpool, however, did not believe in extension, and that feature of this brace did not originate with him.

The measurements above and below the knee are important, for unless these bands are properly adjusted there may occur a tendency to subluxation of the tibia. These bands draw the head of the tibia forward and hold backward the lower end of the femur The shoe of the opposite side should have an elevation of two inches applied to the sole. This brace has several advantages over plaster-of-Paris. It is light and cool and provides extension that can be regulated by the attendant. In overcoming these deformities force is to be avoided, as by such methods it is possible to create a traumatic dissemination of the germ life which has caused all this disturbance. You will not see all cases in the incipient stage, and abscess formation may have already taken place when the patient comes under your care. In all such instances immediately evacuate the abscess cavity, with all antiseptic precautions, and remove all necrotic tissue either in the soft parts, or in the bone. In previous years many surgeons have objected to this radical treatment of these abscesses on the ground that free incision opened up fresh area for further septic inoculation. It is now our custom to forestall this possible complication by a method inaugurated in orthopedic work by DOCTOR PHELPS, and which consists of a literal baptism of the abscess cavity with pure carbolic acid, allowed to remain in contact with the tissues for exactly one minute.' Absolute alcohol is then generously applied and neutralizes to some extent the caustic action of the acid. Bichlorid of mercury solutions are then used in irrigating the joint. I no longer use the old collapsible rubber drainage tubes, but am committed to the use of glass tubes not unlike the old Ferguson speculum. These I use in sizes proportionate to the width of the incision and allow them to remain as the wound heals from below.

Typical restriction of the knee-joint in children under fifteen years is not now recommended when any other treatment can be substituted, because of the subsequent shortening of the limb. A thorough scraping, operating, or arthrodesis is preferred which does not interfere with the development in the epiphyseal line. In patients of mature years, excision is performed. Following any such operation the joint should be protected for at least eighteen months or two years. The injection of iodoform emulsions I have entirely discarded, and this method is now never used in the hospitals with which I am connected. The aspiration of joints of this kind is worse than useless and a waste of valuable time.

I will have this patient admitted to the hospital and will show him to you after a week's treatment.

* * *

HERE is a case of cured hip disease. This little woman came to our clinic some five years or more ago. A Phelps lateral traction hip-brace was applied, which she wore for four years. Neither did anyone move it for her. Both passive and active motion of the knee and hip were strictly forbidden, and, by the application of that brace, made impossible. Yet, here she walks with freely movable joints. She has no angular deformity. The limb is half an inch shorter than its healthy mate, but this is not noticed because the shoe is built up in the sole. With hip cases treated with this hip-brace no patient need recover with angular deformity. Such cases are not seen in this clinic unless they come from other institutions where they have been allowed to wear the old-fashioned "long traction brace" which does not immobilize the joint or afford it much protection.

* * *

THIS case just placed upon the table is one in which I show you another excellent case of knee-joint disease, presenting the characteristic deformity. As you see, a plaster-of-Paris dressing has been applied from the middle of the leg up to the groin. You wish to know, however, what is the pathologic condition present in the joint; it is not enough to know that there is disease in the knee-joint. You observe that the limb is flexed, the foot is rotated outward and that there is partial dislocation or subluxation of the tibia backward, which produces the outward rotation of the foot. The flexion is caused by the spasm of the flexor muscles, notably the biceps. She complains of pain, there is evident swelling, there is perceptible elevation of the temperature of the part, there is pain on joint pressure, there is marked atrophy, spasm of muscle and deformity.

It cannot be synovitis as there is no effusion. The disease is both intracapsular and extracapsular, because the pain on joint pressure shows that there is intracapsular disease, and the swelling indicates that there is extracapsular disease. The thickening of the bone and the atrophy of the limb indicate that the disease is in the bone. The pain is referred to the inner condyle, so I can locate the focus of disease. When I pull on the internal lateral ligament she says it hurts. She will be admitted to our orthopedic department and I will apply fixation and extension until the deformity is overcome. She will then be another candidate for the Thomas knee-brace.

* * *

OUR next patient is this case of flat-foot. The man tells us that the trouble with his foot is due to his slipping down stone steps. The foot at first became a little flattened, then a trifle everted, as you see it now. He has been wearing a shoe with the sole built up on the inner side after the manner advocated by THOMAS. His idea was that by this means the weight of the body would be taken off the scaphoid bone. If I draw a line from the spine of the tibia downward to the foot, you will see that it passes far to the inner side of the foot, whereas it should pass through the center of the tarsus. As a result of this deformity, the weight comes upon the os calcis, the cuboid bone and the ball of the great toe. The weight of the body should fall equally on these points. When from any cause the entire foot is swung outward and the arch is at the same time flattened, we have the condition found in this case. He complains of pain where the fibula presses on the os calcis and on the sole of the foot as the result of the tension of the fascia. The cause of this man's trouble was trauma. Another etiologic factor is paralysis of certain groups of muscles. A third cause is stretching of the ligaments and fascia in the sole of the foot. An illustration sometimes mentioned by DOCTOR PHELPS in this connection is, that when an architect builds a bridge, he not only puts in a keystone, but places an anchorage on either side to prevent the sides of the arch from spreading. Of course a "stringer" can be used instead of these anchorages.

This "stringer" in the human foot is the plantar fascia. As soon as the arch spreads slightly, the keystone of the arch will be pressed upon its upper border, the keystone becomes crushed, and the integrity of the arch is destroyed. In the foot the arch is made up of the os calcis, scaphoid, astragalus, cuneiform and metatarsal bones on the inner side. The arch is held by the plantar fascia and deep ligaments. If these "stringers" become stretched from any cause, such as traumatism, or if in early life from any cause the arch becomes flattened, greater pressure is brought upon these parts and the keystone of the arch, the scaphoid bone, is subjected to unusual pressure. This results in inflammation of the mediotarsal articulation and spasm of muscle. The advantage of leverage is thus given to the peronei tendons, which pull harder, thus converting the foot later on into a valgus. As the foot turns outward the external malleolus impinges against the os calcis, and this causes the inflammation and pain.

This cannot be confounded with tuberculosis of the tarsus, for in that condition the disease is always located at the mediotarsal articulation. The swelling is located higher up and is associated with great tenderness. In flat-foot the pain and tenderness are located directly at the mediotarsal articulation. These cases frequently are treated for rheumatism by practitioners who are not familiar with flat-foot. There should, however, be no trouble in differentiating them.

The treatment of this condition is to place the foot in such a position that the weight of the body will be transmitted through the cuboid bone and not through the scaphoid. Support of the foot so as to hold up the anteroposterior arch, and also prevent the spreading of the transverse arch of the foot is also necessary, The best method of treatment is to etherize the patient, and then with the hands pull the foot around so as to relieve the injurious pressure and then apply plaster-of-Paris. If the peronei tendons resist too much they may be divided subcutaneously, This plaster dressing will be kept on for ten days. The rest thus secured for the foot will allay the inflammatory action. After this it will be proper to use for a support to the foot a certain form of flat-foot plate.

ROBERTS, of Philadelphia, devised a good plate, YOUNG, of the same city, modified the Roberts plate, making it less cumbersome. WHITMAN, of this city, has made a plate that I like very much, and one that I am accustomed to use in cases of this sort. The plate projects above the outer and inner side and extends from the ball of the foot to the heel. First put the foot up in plaster-of-Paris and procure an impression of it. Using this as a mold there is obtained a plaster cast of the foot. At the foundry an iron mold of the foot is made. The instrument maker uses this iron last for his pattern and over it hammers a thin light plate.

These plates, like all of our braces and the aluminum corset, are made in our orthopedic workshop in this building, where you may all witness the different stages of manufacture. Tomorrow I will take the impression of this patient's foot, and you will see the plates fitted to his foot here in about a week from this date. The operative treatment by Paquelin cautery and cuneiform osteotomy, I will speak of on another day. PROFESSOR MEYER some years ago did a number of operations for flat-foot after the method of TRENDELENBURG. The results were, however, indifferent.

* * *

HERE is a little girl who was operated on a few weeks ago for double equinus, by dividing the tendo-Achilles in both feet. It was a case of spastic paralysis. We have in this way overcome a marked deformity that might have been prevented in the first place by proper bracing. It is our custom here to divide all spastic muscles in these cases and put the limb up in proper position. If there seems any tendency to deformity after this we will measure for and apply a brace. If in this way deformity is prevented, many of these children will outgrow the lesion in the spinal cord, or brain, and you will have prevented them from growing up with such hopeless deformities.

* * *

HERE is a little child which I show you in order to fix in your mind the form of brace I recommend in these cases of hip-joint disease. It is the Phelps lateral traction fixation splint. The hip splint should extend above the hip-joint in order to secure fixation, just as it is necessary in treating other joints to extend the splints beyond the limits of the affected joints.

* * *

THIS next noisy little fellow has equinovarus in the left foot. He is three months old and is now wearing the simple adhesive plaster dressing which I have recommended. The child is old enough to undergo an operation and will be admitted to the hospital for that purpose. As I have said before, cut all the resisting parts beginning with the tendo-Achilles, and not stopping until the foot has been restored to a good position and the deformity a trifle supercorrected. I will not enumerate what parts to cut, for the rule is to cut whatever tissues prevent you from putting the foot in a supercorrected position, including the skin if necessary.

* * *

I WILL occupy just a moment in showing you this case of torticollis before he is discharged. He came here a month or two ago and was at that time as typical a case of spasmodic wry-neck as I have ever seen. The history reads: " Previous health always excellent. Two months ago he suffered from an abscess in the right submaxillary region, which was opened, drained and allowed to heal. Following the closing of the wound there developed a tendency to incline the head toward the right side. The left side of the patient's face was much more prominent than the right and the right sternocleidomastoid muscle was rigid and apparently shorter than its mate of the opposite side, presenting the characteristic attitude of torticollis. There was no history obtainable of either traumatism, tuberculosis or other constitutional disease."

At my first examination, when I lectured on the case here in the amphitheatre, I believed that in order to restore the head to its normal position it would be necessary for the patient to undergo a myotomy of the affected muscles, and with such a course in view he was admitted to the hospital. As the deformity was of only two months' duration, and the affected muscles tender and quite sensitive upon manipulation, DOCTOR

PLIMPTON suggested that the symptoms were those of a neuritis of the spinal accessory, and advised that before we resorted to operative measures an attempt should be made to overcome the spasm of the muscle by extension, and, if necessary, to maintain the head and neck in proper position by subsequent mechanical treatment. This arrangement, too, was satisfactory to the parents who greatly desired to avoid an operation. The young man was placed in bed wearing a leather head and chin piece such as is ordinarily used in the application of a jurymast in cases of cervical spondylitis. Attached to the crosspiece or spreader, above the leather straps which were fastened about the boy's head, was the usual extension cord running over a pulley on the headboard of the bed and carrying a weight of three pounds. Later in the treatment this weight was increased to five pounds, and was worn continuously for five weeks. The results of this extension were immediate and marked. The neck straightened, and the patient complained of no untoward symptoms. At the expiration of a little more than one month the head was in normal position, the spasm of the muscle was overcome, and it was thought best to allow him to get up and walk about in the wards.

Fearful lest the deformity might insidiously creep on again, and an operation after all be necessary, I decided for awhile at least, to apply some apparatus that would continue the good work accomplished by the extension worn while in bed. Instead of wearing a complicated, awkward and expensive brace, our patient will leave the hospital wearing this light appliance that I now show you, made entirely of webbing and a few buckles, at a cost of less than fifty cents. The construction is as follows: Band of webbing around the forehead with a chin-strap of the same material, running from in front of one ear, beneath the chin, to a corresponding position on the opposite side of the face. Two more pieces of webbing are attached to the piece encircling the forehead and carried down over the shoulder and buckled to this Ferris waist. These "guy" ropes can be tightened at the pleasure of the attendant, and keep the head in the desired supercorrected position. By means of this little apparatus which was easily made by the nurse at a small expense and without delay, results are obtained as satisfactory as could have been secured with an unsightly heavy brace, which is listed in the instrument maker's catalogue at twenty-five dollars.

"One swallow does not make a summer," and neither of course does one cure of this sort mean that all cases of torticollis can be cured without operative treatment. In the majority of cases seen in hospital work, where the more severe deformities are wont to come for treatment, and when the muscles of the side affected are in a state of contracture, it will be found necessary to resort to section, either openly or subcutaneously, of the contractured muscles, when, however, the period of muscular spasm has been of comparativly brief duration, as in the cases most likely to be met with by the family physician, wherein the contraction of the muscles depends on some recent neuritis of the branches of the spinal accessory and posterior cervical, then the methods herewith described may accomplish all that is to be desired.

* * *

OUR last case for this afternoon gives a history of tuberculous disease of the shoulder. I am glad that this case has come today. I have shown you how to apply extension and immobilization to many of the joints and now I will demonstrate the principle of extension as applied in shoulder cases. A pad is placed in the axilla with a strap of adhesive plaster running up over the shoulder. Another strap is placed around the arm, fastening the pad to the arm. A larger strap encircles the chest and fixes the arm to the body. This is our best method of immobilizing and at the same time applying extension to the shoulder.

304 West One Hundred Sixteenth Street.

MEMOIRS.

OBSTRUCTION OF THE BOWELS.*

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When studying the diagnosis of obstruction of the bowels we must bear in mind that it is impossible to draw a sharp dividing line between cases of acute and those of chronic character, for the reason that many cases of the former have been preceded by pathologic conditions of long standing, which become manifest only when they result in an intestinal stoppage. It is remarkable indeed what serious impediments to the passage of food or feces may exist before the patient becomes aware of his dangerous condition. Intestinal stenoses may exist for months before they culminate in acute obstructions. This is especially true of those which are caused by slow-growing tumors, by irreducible hernias, and by cicatricial bands. Many obstructions also occur as complications of other maladies, such as appendicitis, and their own peculiar symptoms are often marked by those of the diseases which have caused them. The discussion of the subject must therefore take in a wide field if we would avoid those partial views which lead to errors in practice. When considering the various phenomena which form the bases for a sound diagnosis, we should not omit a searching inquiry into the previous history of our patients. We may find in their habits of life, in previous maladies, or in their actions just before the attacks, clues which may guide us to rational therapeutics.

The causes of intestinal obstructions may be enumerated as follows:

(1) Atony and paralysis of the bowel.
(2) Accumulation of feces.
(3) Foreign bodies lodged in the bowel.
(4) Volvulus.
(5) Hernia.
(6) Ulcers, scars, and adhesive bands.
(7) Intussusceptions.
(8) Tumors.
(9) Failures in development, including fetal remnants, such as Meckel's diverticulum.

The seat of intestinal obstruction may be anywhere in the alimentary canal from the cardiac orifice of the stomach to the anus, and the symptoms caused by the impediments will vary according to the completeness of the obstruction, to the pathologic condition which causes it, and to the part of the bowel affected. Scarcely any two cases are just alike and many will run to a fatal termination without exhibiting symptoms which the text-books describe as pathognomonic of the disorder.

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* Read before the Detroit Medical Society.

The symptoms of obstruction, whether acute or chronic, are:

(1) Obstinate constipation.
(2) Abdominal pain.
(3) Vomiting.
(4) Distension of abdomen.
(5) Tumor.
(6) Bloody and mucous stools.
(7) Fever and sepsis.

However, obstruction may exist and yet the patient have several evacuations of the bowels. It may exist without abdominal pain, without vomiting, and with only moderate and partial distension. There may be no tumor, nor fever, nor sepsis.

Short reports of certain cases in my own practice will serve to illustrate some of the difficulties in diagnosis:

A boy of twelve years, who during a period of over three weeks had had no evacuation of the bowels, was some years ago brought into Saint Mary's Hospital. He was weak and anemic and of a grayish white color. He had lost all appetite but had not vomited. His abdomen was enormously swollen, but no tumor could be anywhere detected. We placed him under an anesthetic and an enormous quantity of feces was dug out of his rectum and washed out of his colon. He was then given strychnin and massage was applied to his abdomen. He had no recurrence of the obstruction and went home well. This case represents the simplest form of obstruction—that from neglect and from atony of the bowels. In this condition the feces collects in the large intestine, becomes dry and hard, and gradually forms an impassable mass. Occasionally the irritation of these collections will cause mucous or watery discharges. They are rarely accompanied by much pain or vomiting for the colon is a natural reservoir and endures much abuse before reacting against abnormal distension. The main symptom of cases of this kind is obstinate constipation alternating in some individuals with diarrhea.

A similar condition is sometimes produced by the ingestion of indigestible articles of food. I was once called into the Saginaw Valley to see a woman suffering from symptoms of obstruction of the most pronounced character. Forty-eight hours before, she had eaten a large amount of dry popcorn in a greedy and hasty manner. A few hours afterwards she was seized with pain and vomiting and became enormously bloated. Cathartics were not retained in the stomach and enemata failed to produce an evacuation of the bowels. While we were preparing for an operation she was seized with a terrible tenesmus and finally achieved the expulsion of the undigested corn and with it the cause of her malady.

Similar cases are on record from the ingestion of stone fruits which have been swallowed whole. It was, I think, a Boston surgeon who opened the colon for an obstruction in a boy, and extracted large quantities of cherry pits. I have twice operated for obstruction caused by gall-stones of giant size. Both cases were, curiously enough, in the practice of DOCTOR CHAPOTON. The first case was that of a woman about forty-five years of age, who had for years suffered from attacks of biliary colic. She had long felt a hard lump in the region of the gall-bladder. In one of her attacks of pain the lump suddenly disappeared and the pain subsided. However, in the course of a few hours, it recurred, and she began to vomit. When I saw her, she was vomiting a foul-smelling fluid and her abdomen was swollen. She had great pain but no abdominal tenderness. She was a large, portly woman, and the operation was made with some difficulty. I found at the junction of the jejunum and ileum a gall-stone as large as my thumb, which filled the entire lumen of the gut. I incised the bowel and removed it. Investigating the relations still further, I found a few inches lower down a volvulus with much discoloration of the intestine at the point of the twist. This was relieved and the patient recovered. The sequence of events in this case is evident. The gall-stone had passed from the gall-bladder into the intestine through an opening caused by ulceration. It passed down the larger jejunum without great difficulty but was arrested in the narrower ileum. The violent spasm of the intestine caused by its presence resulted in a volvulus, making thus a double obstruction.

The second case was that of an old lady eighty years of age. She had an enormous umbilical hernia and when she began to show symptoms of obstruction, such as pain, distension, constipation, and fecal vomiting, it was supposed that the hernia was at fault. The operation for her relief was undertaken rather as a matter of duty, than in expectation of her recovery. With the assistance of her physicians, DOCTORS CHAPOTON and IVES, I opened the hernial sack, to find no incarceration whatever. A portion of the protruded gut, however, was distended and a portion collapsed. At the point of junction of the two sections was a round gall-stone, large enough to fill entirely the lumen of the bowel. The stone was removed but death occurred a few hours later.

The obstruction caused by a tumor or an ulcer of the intestine may culminate in a few hours and put the patient in imminent peril. In September last I was called to Rochester to see a man, a patient of DOCTOR JERRY WILSON, who had suffered during a period of four days from an acute obstruction of the bowels, Three weeks before he had had a mild attack of pneumonia, from which he had recovered. The obstruction came on suddenly without apparent cause. One year previous he had had a severe attack of colicky pain with considerable bloating of the abdomen, and after that he and all his family had been poisoned with tyrotoxicon, but had never before exhibited symptoms which pointed to obstruction. When I saw him, he was much distended and suffered a great deal of colicky pain but had not vomited at all and had no abdominal soreness. His pulse was 130 per minute and his temperature 101° Fahrenheit. While discussing the question of operating, his bowels began to move for the first time in four days, and he passed a considerable quantity of thin feces. The operation was therefore postponed in the hope that relief had come. He died, however, on the next morning, and DOCTOR WILSON wrote me that on making a postmortem, he found a growth in the muscular wall of the jejunum about four inches in length, which had so closed the passage that a small lead pencil could with difficulty be passed through it.

This case illustrates a point which I wish especially to insist upon, namely, that obstruction located high up in the jejunum may run a fatal course without provoking vomiting. The seat of disease was eighteen inches below the pyloric orifice.

The long tolerance of the intestine to a chronic narrowing of the passage is shown also in a fatal case which I had last summer with DOCTORS JONES and YATES. A young man of twenty-two years had had in the beginning of 1899 an attack of obstruction while visiting in Minnesota. It lasted four days and was finally overcome by the inversion of his body and massage of his abdomen. For more than a year he was, if his account is to be believed, free from all abdominal pain and disturbance. Then without apparent cause he was seized with constipation, acute pain and vomiting which finally became fecal. Remembering his previous recovery, he refused to have a surgeon's assistance until the fifth day of the disease when he permitted his physician to call me in consultation. I found him with a distension of the upper part of his abdomen, and in a great deal of pain. He had a temperature of 101° and a pulse of 120. He had the evening before vomited matter of a pronounced fecal character, but that which he ejected in my presence was a greenish fluid without odor. He was at once taken to Saint Mary's Hospital, where I proceeded without delay to an operation. On opening the abdomen, I found the intestines mottled and discolored and matted together by recent adhesions. On disentangling them, I came upon a cavity containing a large quantity of black, offensive fluid in the depths of which there appeared intestinal surfaces intensely inflamed and covered with gangrenous patches. As these coils were withdrawn there came into view a portion of the gut about a foot long which was completely mortified and firmly fastened by old adhesions to the rim of the pelvis. It was impossible to break these adhesions with the fingers and I was obliged to cut them with scissors. When the coil was finally disengaged, I was surprised to find an old twist of the gut, which evidently had had its origin a year before in his first attack, and which had never been relieved. It is to me to this day a mystery how the functions of the intestines could have been carried out at all under the conditions which were present. It is probable that, when he was turned upside down by the Minnesota surgeons, a change had taken place in the relations of the bowel which made it possible for the food to pass through the volvulus, the seat of which was in a coil of the jejunum. Above the volvulus the intestine was distended with thin feces, below, it was contracted. The gangrenous coil, twelve inches in length, was excised and the ends fastened into the abdominal wound. The patient did not rally but died during the night, and a postmortem was not permitted.

This case is, I think, unique. At least, I have never heard of any other patient who has lived a year with an unreduced volvulus without any abdominal distress or disturbance. The final catastrophy was probably caused by the contraction of the inflammatory bands which surrounded the gut and tied it to the rim of the pelvis.

It is, however, especially in the large intestines, that nearly complete obstruction may exist without producing obvious symptoms. One of the functions of the colon is to act as a receptacle for feces and it is very tolerant of accumulations which not only clog its lumen but also produce considerable distension. It has besides a good deal of muscular power which may be excited advantageously in overcoming obstacles to evacuation. The ileocecal valve prevents any retrograde movement of its contents and affords a point of resistance to the muscular play. For these reasons the obstruction made by a tumor or by a slowly contracting band will often produce very little disturbance until the limit of distension has been reached. I have had a number of cases of this kind in which the final culmination of the disorder was extremely sudden, but the history of one will, however, suffice.

An old lady was brought to Saint Mary's Hospital with a fracture of the base of the skull, caused by the collision of an automobile, in which she was riding, with a street car. She lay insensible for several days and was partially paralyzed for many weeks. During her stay in the hospital my attention was called to her rectum by the frequent passage of blood and mucus. I discovered as high up as I could reach a cancerous stricture. She returned home convalescent from her injury, but shortly afterwards began to complain of abdominal pain and distension and obstinate constipation. In the course of three or four days she had failed to that extent that I was obliged to perform inguinal colotomy under local anesthesia. The relief was immediate and permanent, and when, some five months after the operation, she came to my office to pay her bill, I scarcely recognized her, so well and stout had she become.

In some cases a growing obstruction of the small intestines instead of terminating in a sudden stoppage will indicate its presence by unmistakable symptoms which are caused by the effort of the bowel to force its contents through a narrow passage. In such persons, an hour or two after meals there will begin a series of intermittent colicky pains, which will make waves of motion apparent through a thin abdominal wall. The bowel will violently contract until the passage is forced and then relax, the success of the movement being announced each time by a gurgle, a wave of motion and a cessation of pain. This will be kept up until the bowel above the point of constriction has become emptied.

I remember a patient I had several years ago, a young man of twenty-five who had been injured by a board which had been thrown against his abdomen. He presented the phenomena I have just described in a marked degree,—the agony, the wave of motion, the gurgle, and the cessation of pain, coming after every meal, caused a loud outcry for relief. I found in this case that the jejunum was the seat of a cicatricial contraction which had nearly obliterated its canal. I excised that portion of the gut and cured the patient.

Appendicitis is a frequent cause of obstruction, either by paralyzing the bowel, or by forming adhesions, or by inciting a violent vermicular motion which will cause a volvulus. Of obstruction from the adhesions, resulting from appendicular inflammation, I have seen several cases. They make a very dangerous complication of the disorder. Of volvulus accompanying appendicitis, I have seen but one case, and that very recently in the practice of DOCTOR SISUNG of Monroe.

A child of three and one-half years, always strong and healthy, was seized on Wednesday, September 12, with diarrhea and abdominal pain, which was ascribed to the ingestion of green fruit. When DOCTOR SISUNG was called, on September 13, he found the child with a temperature of 102.5° Farenheit, a pulse 140 in the minute and with pain and tenderness at McBurney's point. He had vomited some green fluid. On September 14, he was more bloated and constantly belched gas from the stomach. He vomited, but the matter ejected had at no time a fecal odor. September 15, I saw him in the evening and found him very much bloated, greatly distressed, and constantly eructating gas. The abdomen was tender over McBurney's point. His bowels from the beginning of the attack had been constipated. From the high fever and general distension, I expected to find the abdomen full of pus, and was much astonished on making an incision in the right iliac fossa to find myself confronted by apparently healthy coils of intestine. There was no pus in the abdomen and I could not at first find the appendix.

Then suspecting an obstruction I began a hunt for the affected coil, and finally found a volvulus of the jejunum. This gut had been twisted and at the point of twist there was a black gangrenous-looking mark involving about half the circumference of the bowel. This was doubled in by Lembert sutures. The neighboring intestine was red and covered with lymph. Now, turning my attention again to the appendix, I finally found it behind the cecum in the cellular tissue and pointing up toward the loin. It was gangrenous and perforated and contained a large fecal concretion, but curiously enough had exhibited very little suppuration. The child died at 3 o'clock the next morning. DOCTOR SISUNG attributed the volvulus to the irritation caused by a teaspoonful of turpentine given before his arrival and that is a possible solution of the problem.

Recurring obstructions may occur when the mesentery or mesocolon is unusually long, as this condition favors both volvulus and invagination. In operating for these troubles, therefore, it is well, after relieving the twist or inversion, to take a reef in the mesentery. Recurrence may also take place when there are persistent adhesions and when the original trouble has never been fully overcome. Thus in hernias, there may be repeated incarcerations and obstructions unless the rupture has been radically cured.

In all obstructions, except a few, time is the most important factor in successful treatment, and he only acts skillfully who acts quickly. A few hours of a volvulus may end in gangrene, and of an intussusception may cause an agglutination of the opposed serous surfaces, which will make it impossible to disentangle them without tearing the softened gut. It is this circumstance which makes an early diagnosis imperative, for there are few obstructions which do not call for prompt surgical procedure.

In making a diagnosis, it becomes important to distinguish those cases which do not demand immediate operation from those that do. The former may be speedily mentioned. They are those which are due to atony or paralysis of the bowel, to impaction in the bowel of undigested food or feces, and to conditions of partial obstruction, such as are caused by cicatrices or slowly growing tumors. Even these cases may on occasion demand abdominal section, but if we except these all others call urgently for prompt relief.

When coming, then, to a case of more or less acute obstruction, the physician must first ask himself whether the trouble may be due to the causes just mentioned, for it becomes his duty on eliminating these to call a surgeon at the earliest possible moment. In making the diagnosis, the history of the case becomes of vital importance. The habits of the patient as regards defecation, the food he has been eating, the illnesses and injuries he has undergone, and especially the previous occurrence of attacks of partial obstruction, will often bring one to a correct conclusion, and whatever doubt may then exist should if possible be dispelled by a careful study of the individual symptoms. These symptoms are:

(1) Obstinate constipation.
(2) Abdominal pain.
(3) Vomiting.
(4) Distension of abdomen.
(5) Tumor.
(6) Discharges of blood and mucus.
(7) Fever and sepsis.

Constipation usually exists in obstruction, whatever the cause, and wherever the seat. There are, however, many exceptions to this rule. The irritation caused by impacted feces will frequently produce a form of diarrhea. The contents of the bowels below the seat of the obstruction may all be discharged and a stoppage in the jejunum may exist with frequent alvine evacuations. In incomplete and yet dangerous obstructions a portion of the intestinal contents may be forced through the narrowed canal. It must be remembered, therefore, that the occurrence of such evacuations does not absolutely exclude the diagnosis of obstruction. The abdominal pain is caused by the spasm of the bowels as it tries to force the passage and by the succeeding distension.

An important point in the diagnosis from inflammation, is the absence of soreness on pressure during the first stages of the attack. The pain from inflammation is from the beginning associated with great tenderness, but in obstruction, this tenderness is rarely noticeable until inflammation has supervened to the obstruction. When a case of acute constipation, vomiting and colicky pain permits free manipulation of the abdomen, inflammatory conditions may usually be excluded. In intussusceptions of the large intestine the pain may be of a dysenteric character and be associated with discharges of blood and mucus. The vomiting of obstruction is a symptom of great importance, if only for the reason that many physicians are accustomed to wait for fecal vomiting before admitting that diagnosis. It is therefore of first importance to impress upon every practitioner the knowledge of the fact that acute and fatal obstruction may occur even in the small intestines without the vomit ever assuming a fecal character. This was illustrated in a case which I saw in consultation with DOCTOR ROBBINS.

A gentleman was seized with vomiting and pains in the abdomen. His bowels became obstinately constipated. There followed a moderate distension of the upper part of the abdomen. He was greatly prostrated and his pulse grew fast and weak. When I saw him on Sunday morning, he presented a leaden color, had a quick, feeble pulse, a temperature of 101°, an irritable stomach which ejected every three or four hours a green, odorless fluid, and an abdomen somewhat swollen above the navel and tympanitic, but apparently not tender. On operating DOCTOR ROBBINS found a volvulus three feet below the pylorus. The intestine at the twist was much discolored and inflamed; above it, distended with gas, below it empty and collapsed. At no time had there been any vomiting with fecal look or offensive odor. The patient died soon after the operation.

In the fatal case, reported in this paper, which I saw with DOCTOR WILSON, at Rochester, there was no vomiting whatever, but the man died from obstrnction of the jejunum. In that which I saw with DOCTORS JONES and YATES there had been fecal vomiting, but when I arrived the character of the vomit had changed to that of a green, odorless fluid. It is evident that the higher up in the jejunum the seat of obstruction, the less tendency there will be to fecal vomiting. If a volvulus should take place in the jejunum not far below its origin, after the last previous meal had been digested and passed into the ileum, vomiting might not occur at all. The intestine above the constriction being empty, there is nothing to eject and nothing to excite vermicular motion. Cases of this kind may be exceedingly puzzling from the absence of typical symptoms. In fact, all symptoms, except that of an ill-defined distress, might fail until the patient is persuaded to take food again.

The fact that complete obstruction may take place in the large intestine without causing any vomiting at all, is, I think, too well known to the profession to require further comment. When vomiting does take place in such conditions, it is rarely of fecal character.

As regards distension in obstruction, it almost always occurs, but the degree of abdominal swelling will vary much in different cases. In cases of obstruction high in the jejunum there may be very little enlargement, for the reason that the gut above the point of stricture is small, and because also, escape of gas in some individuals will occur through the stomach and the mouth. The ability of the intestine to expel all gas and feces below the obstruction will also have an influence in determining the extent of distension.

Tumors, when felt through the abdominal wall, throw light upon the seat of trouble. There are, however, few cases in which it is possible to feel any decided tumefactions. Invaginations may sometimes be discovered as firm swellings in the region of the colon. Malignant growths often make themselves manifest to the touch, and inflammations which cause obstructions may usually be detected as hard, brawny swellings.

There is one matter of diagnosis which is very important and at the same time often very difficult. A surgeon is called a distance to operate for obstruction. On arrival, he is confronted with the statement that the symptoms have changed for the better. The question of operation or no operation then assumes a different phase, and he has to ask himself not whether obstruction has been present but whether it has been relieved—a question of vital importance to the patient whose life may depend upon its proper answer. The relief of obstruction may manifest itself by alvine discharges, by subsidence of distension, by remission of pain and vomiting. Unfortunately all of these may be illusory and may mean merely a passing change in the phases of the disorder and not its relief. I have twice under such circumstances had patients experience permanent relief. In the Rochester case, however, there occurred suddenly many profuse discharges from the bowels with some subsidence of distension and pain, and yet the obstruction persisted and the patient died.

In conclusion, I will add that the diagnosis of obstruction is made more obscure by the efforts of authors to formulate symptoms pathognomonic of all cases. In fact there are many varieties of obstruction which present very diverse phenomena. He only can become expert in judging of these conditions who is accustomed to study them at the bedside and bring to their study an unbiased mind.

NEURALGIAS OF THE FIFTH NERVE.*

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NEURALGIAS of the fifth nerve, or of any of its divisions, are of more frequent occurrence than all other neuralgias combined. Since the fifth is by far the most important nerve of common sensibility in the body, it is not surprising that here neuralgia has its favorite seat, and that along its range the affection is exhibited in its typical form, presenting all the varying degrees of pain which sensory nerves can express. In its more severe form (tic douloureux) the paroxysms of pain are comparable only to the lightning pains of locomotor ataxia, or to the distress resulting from compression of the posterior roots of the spinal cord.

Trigeminal neuralgia is a disease of adult life, and is more frequently seen in the female sex. It occurs in two forms—symptomatic and idiopathic. These two types possess well-marked and distinct features, and each may show modifications depending upon the the causal factor. The first form is the more common and is generally confined to the period of life between the twentieth year and middle age, while the second form, ordinarily known as tic douloureux, is almost invariably an affliction of the second half of life. In this latter the pain is fixed, severe, often intractable, and seldom entirely remits; in the symptomatic form it is usually migratory, tractable as a rule, and characterized by complete remissions.

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* Read before the SAGINAW COUNTY MEDICAL SOCIETY.

The causes of trigeminal neuralgia are manifold. Perhaps there is no disease in the category of human ills that may be excited by so many different factors. This is especially true of the symptomatic variety. In general all influences detrimental to the general health may favor its development. Individuals of feeble constitution, as well as those who are irritable, emotional, excitable and nervous are especially prone to attacks. A neuralgic diathesis appears to underly a certain proportion of cases, and I have no doubt that the neuropathic condition is the predisposing cause in the greater number. Exposure to cold and wet, over fatigue, excessive venery, carious teeth, aural irritation, ocular muscle insufficiencies, gastro-intestinal derangements, and peripheral irritations wherever situated are among the most frequent causes. An important etiologic element in neuralgias of every kind is the toxemic state, such as arises from alcoholism, lead-poisoning, and autointoxication, or is induced by diabetes, malaria and la grippe.

The pathology of neuralgia in the ordinary form is obscure. Unless in long standing cases of a severe grade, there are rarely any pathologic changes in the affected nerves that can be disclosed either with knife or microscope. In tic douloureux, however, the reverse is true, and, in fact, this particular type is the one form of neuralgia that can lay claim to the distinction of a pathology. Indeed, it is questionable, from the tenderness of the nerve and the continuous character of the pain, whether many of these cases should not properly be regarded as examples of neuritis. As the most severe instances of tic douloureux are seen in the aged, it is probable that we have here a nutritional or degenerative weakness impairing the integrity of the sensory neurons. If the assertion that pain is the cry of a nerve for nourishment can ever be applied with truth, it certainly is applicable here. The pathologic condition most frequently observed in such cases is a shrunken and defective condition of the cell bodies in the Gasserian ganglion. A slow, insidious blight seems to be at work in the nerve cells, strangling them one by one, in much the same manner as the motor cells in the anterior horns of the spinal cord are stifled in cases of progressive muscular atrophy.

The most constant and characteristic symptom of trigeminal neuralgia is pain—lightning-like in its onset, sharp, darting in character, and of varying intensity. Generally it is unilateral, as often found on one side as on the other, and, as a rule, is confined to one division of the nerve, although two or all may be affected at the same time. The paroxysmal character of the pain is more pronounced in trigeminal neuralgia than in other forms. A series of sharp stab-like pains occur every few moments; a series of pains in succession constitutes a paroxysm; and a series of paroxysms constitutes an attack. An attack may last from several minutes to a few hours. Then follows a more or less prolonged interval of freedom, varying from several hours to several months. Occasionally the attacks show a certain periodicity, tending to recur at fixed intervals. Very often, especially in long established cases, a paroxysm or an attack is easily provoked by the slightest breath of cold air, by atmospheric influences, motions of the jaw in talking, eating or drinking, changing of posture, and even by lightly touching the skin of the part. Among the minor and inconstant symptoms are flushing of the face, lacrimation when the ophthalmic division is involved, and spasmodic movements of the facial muscles when the inferior maxillary division is affected.

Neuralgia of the ophthalmic division of the fifth nerve is frequently spoken of as supraorbital neuralgia, and popularly known in malarial districts, as "brow ague." The chief point of pain is over the supraorbital foramen, and from this point it follows the ramifications of the nerve over the forehead. Pain is also felt along the side of the nose following the nasal branch and occasionally deep in the orbit, with lacrimation—usually during a paroxysm. In neuralgia of the second division the pain has its point of greatest intensity at the infraorbital foramen, whence it radiates over the area bounded by the upper lip, the side of the nose, the orbit and the malar bone. Pain in the teeth of the upper jaw is likewise not infrequent. When the inferior maxillary division is affected the pain has a much greater range than in either of the other divisions. The chief points of tenderness are the posterior part of the temple, area in front of the ear, over the mental foramen, and occasionally pain in the side of the tongue and the teeth of the lower jaw.

The prognosis in all cases of neuralgia is favorable when it depends upon some conspicuous cause that can be removed, and unfavorable when it depends upon causes that cannot be demonstrated, or upon causal factors that cannot be removed. It is more encouraging in the young than in the old, but discouraging if it has been established a long time, and has proved intractable to treatment. All cases are likely to prove stubborn if reinforced by a pronounced inheritance. As a general rule cases are intractable in proportion to their duration, their severity, and the frequency of attacks. As far as life is concerned neuralgia does not abridge it to any appreciable extent. It simply makes it intolerable, and I have known at least one instance in which the hopelessness of relief from the periodic occurrence of agonizing pain had caused the individual to voluntarily snap life's slender thread. On the other hand, even among victims of tic douloureux, one frequently meets with admirable examples of cheerfulness, patience and fortitude under adverse circumstances. Strange to say, and contrary to what would naturally be expected, the frequent occurrence of pains of great intensity, over a long period of time, is attended by little or no apparent deteriorating effect upon the mental or physical state.

The question of treatment of trigeminal neuralgias is one that is often perplexing and difficult to solve. I know of few conditions, the treatment of which require so much diligence and patience, and in which the best efforts of the physician are so often unrewarded by satisfactory results. At the outset the important task is to search for a cause, for it is a peculiarity of all forms of neuralgia that they persist until their causes are removed. In anemic and debilitated states surprising results sometimes follow improvement in the general condition. In all cases it is desirable that the strength and nutrition be maintained at the highest point of efficiency. For the relief of pain applications of ice or dry heat over the painful area are often serviceable. When the paroxysms are severe hypodermics of morphin or cocain are imperative, the former being perhaps more efficacious, as the latter is strictly temporary in its effects. Atropin is also recommended by some authortities, but its anodyne properties are not sufficiently great to compensate for its undesirable constitutional effects, especially the dryness of the throat. The crystalline alkaloid aconitin is a drug which possesses a fairly good reputation in tic douloureux. It should be given in two-hundredth grain doses, every two hours, until numbness of the tongue ensues. In cases of weak heart it should not be used. A combination of morphin one-twelfth grain, and strychnin one-eightieth to one-hundredth grain, has given remarkably good results in a large number of cases. This is well adapted for continuous use, as given three or four times a day, it has the merit of being not only sedative but curative, the morphin allaying irritability in the nerve, and the strychnin promoting alterative changes which enhance its nutrition. Nitroglycerin in one-hundredth grain doses, twice or thrice a day, is strongly recommended for similar reasons, since by dilating the capillaries it flushes both nerve and nerve centers. Croton chloral appears to have a special anodyne influence over the fifth nerve, but is, however, frequently disappointing. Combined with small doses of morphin it is sometimes exceedingly useful. Blisters, cauterization and liniments of various kinds are common and helpful agents in certain cases, but in others the inconvenience and discomfort of their use simply adds to the patient's misery. Electricity is an agent of more general utility. The positive pole of the galvanic current applied to the painful area for a few minutes, with a current of eight to fifteen milliamperes has usually a very gratifying effect. The cataphoric action of this current is also powerfully effective. A piece of folded gauze wet in a twenty per cent. solution of cocain, or in chloroform, or in tincture of aconite, and laid over the painful area to which is applied the positive pole, and a current of twelve to twenty milliamperes allowed to run for a few minutes, generally brings about considerable mitigation, if not entire relief of the pain, in a short time. The coal-tar derivatives are occasionally helpful, but their use for any length of time is attended, unfortunately, by depression of the vital fnnctions. Antipyrin I consider the most powerful analgesic of the group, and perhaps the most depressing. It is always advisable to fortify the system against its untoward effects by administering brandy or whisky in conjunction. In attacks of moderate severity phenacetin is often of service, especially so when combined with codein phosphate—an ideal combination in minor pains of every kind. Sometimes the factors which excite, aggravate or perpetuate the trouble may be discovered in the habits, mode of life, or surroundings of the individual. Cases are not uncommon wherein attention to hygiene, avoidance of irregular habits, correction of errors of diet, or changing one's residence from a low and damp situation to a high and dry one, has resulted in immunity, more or less permanent.

It is asserted by some authorities that the administration of a nervine stimulant, as valerianate of ammonia, alchohol, kola, coca, or caffein, when an attack is threatened, will frequently succeed in warding it off. Although the tranquilizing effect upon the nervous system of drugs of this class is undoubted, I do not think they possess any real influence in aborting genuine attacks of neuralgia. From observation in a large number of cases I am inclined to believe that every chronic case of neuralgia, if at all severe, becomes sooner or later set in a hysterical background. Repetition is the law of habit, and a long series of impressions upon the sensorium will increase the susceptibility and power to respond of the centres involved, forming so to speak a pain-habit. The activity of the susceptible centres may be manifested by a state of subconscious pain, in the entire absence of peripheral stimuli of whatever kind. Such pain is generally relieved by any simple measure, as suggestion. I have often been able to charm away apparent neuralgic attacks by hypodermic injection of water, while at other times in the same individual nothing but a substantial dose of morphin would suffice. Why placebo should be effective at one time and not at another seems best explained by assuming that attacks at one time may be real and at another pseudo or subconscious.

As to a court of last resort, the victim of intractable trigeminal neuralgia may turn to surgery. The knife of the surgeon may resect or excise the painful branch, or strike at the citadel of the nerve's nutrition and remove the ganglion entire. However, the results of neurectomy are rarely permanent, the pain returning in a few weeks or months with unabated vigor. This is especially the case in tic douloureux, and proves the cause of the trouble to be the slow, insiduous implication of the cells in the Gasserian ganglion. Of late years the ganglion has been removed a goodly number of times with about twenty-five per cent. of deaths and return of pain in nearly half the cases. Recurrence of pain is usually ascribed to failure of the operator to effect a complete removal. Trophic changes in the eye often follow as a consequence of ablation of the ganglion, sometimes bringing about destruction of the cornea. The most favored method of reaching the ganglion—the Hartley-Krause—is really a formidable and heroic procedure, and after pointing out the risks and possible advantages, I have never been able to prevail upon a patient to submit to it.

On the whole it must be said that in severe and long established cases, there is no royal road to permanent relief from the distressing complaint. No panacea or procedure exists that can be regarded as being uniformly successful. Difficulties now as ever beset the path of the therapeutist, and he who can point out the better way will have justified the end of his existence, and conferred a priceless boon upon multitudes of sufferers whose sunset of life is darkened by fitful storms of pain.

THE PATHOLOGY AND THE ANTISEPTIC TREATMENT OF THE SMALLPOX.*

By ALONZO BRYAN M. D., DETROIT, MICHIGAN.

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So far as the etiology of the smallpox is concerned, we do not know much. It may be a specific germ, or it may not be. At present the world has not evolved an answer to this question. Instinctively, only, the world thinks of the smallpox as if it were caused primarily by a germ which brings about the inception of no other disease. Instinct in science is often correct, is frequently a foreshadowing of the truth, and of facts to be discovered; but of this one truth we are already assured by concensus of opinion, *that the smallpox is both contagious and infectious.* The identical cause of its communicability seems to be unknown.

In grossly considering its symptomatology, the following is to be observed. The onset consists of a fever of three or four days' duration;

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* Read before the DETROIT MEDICAL SOCIETY, November 7, 1900.

this is followed by an eruption, the stages of which are described as macular, papular, vesicular and pustular. It is the pustular stage that is destructive to life; persons seldom die during the primary fever, or during the macular, papular or vesicular stages of the eruption. A remarkable phenomenon is the almost total disappearance of the primary or initial fever upon the appearance of the papular and vesicular stages of the eruption. The term remission is perhaps the more appropriate expression. It is during the pustular stage of the eruption that the secondary fever supervenes, and it might fitly be spoken of as a violent exacerbation of the primary fever. It is this last fever that very frequently proves fatal, the patient, as I believe, having his life destroyed by purulent septicemia. Were it not for the supervention of septicemia the patient would not die, the preliminary trouble being not at all a dangerous affection.

The radical differentiation between the smallpox and varicella has not been made by the world. There is special differentiation; but a most remarkable fact is, that varicella never exists to any great extent unless variola is prevalent in the same locality at the same time. A pathologic relation almost certainly exists between the two diseases. The radical basis for these diseases may ultimately be found to be the same.

In North America, what might very appropriately be denominated a pseudosmallpox has lately and recently prevailed extensively. This kind of disease from time to time pervades the world often, as now, upon a large scale. It occurred in the days of DOCTOR JENNER, and annoyed him exceedingly while he was engaged in establishing his principle of vaccination.

Having made the foregoing premises, I would (as modestly as I can) ask the medical profession to allow me to make the following declaration: It is, that so far as I know, I was the first person to affirm that the true smallpox extends only so far as the vesicular stage of the disease; and that I am the original author of the theory and practice of its antiseptic treatment, and especially of the theory of its treatment by antiseptic baths. In confirmation of this statement I hope to be allowed to quote as follows a paper of mine entitled "Arrest of the Smallpox in its Vesicular Stage," which may be found published in the "Transactions of the Michigan State Medical Society for 1896;" and which was also published in the *Medical Record*, New York, July 18, 1896:

"On Monday, January 14, 1895, at a stated meeting of the Detroit Medical and Library Association, I advanced the theory that the smallpox can be arrested in its vesicular stage. About twenty persons were present, all or most of whom were members of the society, and they accorded my theory considerable applause and encouragement.

"In the paper which I then read, I maintained that the eruption of true smallpox only extends to and includes the vesicular stage; and that the vesicles are simply infection-atria through which pus germs and saprophites are intromitted to the structure of the true skin and to the general system. The paper claimed that the germs of suppuration and of putrefaction are lying in wait, imbedded in the epidermis, ready to commence their ravages upon the true skin and the system at large as soon as their liberation is effected through the instrumentality of the maceration of the epidermal layers by the fluid of the vesicles.

"Furthermore, in the same paper I declared it as my opinion that the aforesaid pathologic germs might be forestalled in their pernicious action by means of germicidal fluids applied to the general surface of the body whereby a complete maceration of the epidermis could be effected. To accomplish this object I proposed baths of long duration in antiseptic fluids. In a word, I suggested the cautious and gradual evolution of a system of disinfection to be applied to the entire epidermal covering. When the epidermis was disinfected it was to be kept that way by means of suitable antiseptic dressings applied to the cutaneous surface until the complete desiccation of the vesicles.

"By means of such a course I proposed to arrest the smallpox in its vesicular stage, and completely prevent suppuration of the skin, and suppurative fever with its various dangerous complications. The above statement expresses only the cardinal principles of the subject discussed in the paper. Up to the present, June 4, 1896, the paper has not been published.

"A few days after having read my paper before the Detroit Medical and Library Association I assumed charge of the smallpox hospital at Detroit, on January 22. I supposed that I should have abundant opportunity to test my theory, but in this expectation I was rather disappointed than otherwise. My appointment was looked upon as a political arrangement, my theory was freely advertised and adversely criticised by the newspapers, the general puplic was enraged, and the poor, unfortunate patients at first looked upon me with dismay rather than confidence. Suspicion and distrust were depicted upon all of their countenances. I found the hospital the last place in the world to exploit a theory. Furthermore, I was deprived of my office on March 9, by reason of a previous act of the State Legislature.

"According to my view it was necessary to commence the treatment for the arrest of the disease either during the primary fever or at least in the incipiency of the papular stage of the eruption. After the slightest degree of pustulation had supervened it would be too late. Nearly all the patients who arrived at the hospital arrived after the vesicles were beginning to become purulent.

"However, one case was on the ground sufficiently early. It was the case of a woman who came as a nurse to attend her sister who entered the hospital fully broken out with the smallpox. This woman while attending her sister, as a nurse, in due time came down with discrete smallpox. In this case the circumstances were such that I only ventured to apply my treatment with the view to the prevention of pustulation, locally. I made my applications to the hands and forearms, which members showed a very free and perceptible papular eruption. The papules all developed into vesicles, but only a very small number dotted here and there became purulent. The vesicles dried up, and assumed the appearance of flat, dark brown, desiccated scales, closely adherent to the skin. In due time they were exfoliated, leaving no scars or pits behind.

"In this case on every other part of the skin than that which was treated the vesicles developed into the complete and typical pustules of variola, the demarcation at the elbows sharply showing the difference between the arrested eruption and that which was allowed to proceed.

"And this was the manner in which I proceeded to arrest the development of the eruption. I first scrubbed the skin of the forearms and hands with a strongly alkaline soap and water in order to remove the oil naturally existing in the epidermis. Then I washed the skin with alcohol to kill germs and also to remove oil. Next the skin was washed with a one five-hundredth solution of bichlorid of mercury. Then it was washed with a solution of peroxid of hydrogen. Each of these washings was of ten or fifteen minutes' duration. Finally the parts were well wrapped in a thick envelope of borated cotton.

"The above washings were repeated daily for three days, and the borated cotton was applied for a day or two longer.

"It should be noted that I would not recommend a universal bath of a solution of the bichlorid of mercury on account of its possibly dangerous systemic effect.

"I did not give this subject of experiment universal baths of antiseptic solutions, because I did not believe she could be prevailed upon to consent to their use, for she evidently shared in the mistrust which reigned throughout the hospital.

"Indeed, according to my theory, I should have expected a very imperfect or negative result from the merely local application of antiseptics. Especially would I look for failure in a case of confluent smallpox, and for this reason that after the suppuration of a large number of untreated vesicles enough pus germs would be found absorbed in the general circulation to effect a suppuration of the superficially sterilized vesicles upon the well-known principle that bacteria floating inertly at large in the system may localize themselves by attacking a weakened and nonresisting part. Nothing is more clearly demonstrated in pathology than that pus germs existing in a state of general circulation often concentrate themselves upon a focus of least resistance and there display their specific energy. So we might reasonably expect a vesicle of variola to be such a focus, and though it might be protected from external infection it could be successfully assailed from within.

"Therefore in a case of discrete smallpox (such as the subject of my experiment was) the damage from the intromission and subsequent localization of bacteria might be trifling, yet in a case of confluent smallpox the phenomena of what might be termed intrainfection would doubtless be very grave.

"And from this very cause we might infer how essential it would be to immerse the patient for hours at a stretch in a suitable germicidal fluid, and at a period, if possible, before the papules have begun to show any accumulation of serum at their apices.

"The main principle is to macerate the whole epidermis thoroughly with some suitable antiseptic fluid, and to do it before or at the very incipiency of the eruption."

Such was my paper of 1896. The disease of which it treated was variola vera; and being compelled by extraordinary circumstances to forego the use of antiseptic baths, there was the usual mortality of about one in four of all the patients treated in the hospital.

It will be understood by the thoughtful, doubtless, that the principles of pathology and antisepsis as set forth in the paper just quoted, would be both paliative and restorative when applied in any stage of variola. They are, indeed, and at the time the experiment above mentioned was made, in other cases I applied antiseptics as well as I could in the suppurative stage, but had to be content with simply washing areas of suppurative surface with antiseptic fluids, and the application of antiseptic powders, antiseptic baths at the time being out of the question. The extraordinary and virulent state of the public mind, instigated by the city newspapers, against me, naturally forbade the practical and complete exemplification of so bold and wholly original a procedure of treatment as my entire theory implied.

At the present date (November 7, 1900) I would suggest, in addition to the treatment by antiseptic baths, that the face and other parts to which the bath is inapplicable, should be treated by disinfectants spread on lint and applied to the skin. For this purpose a preparation known as glycozone could be used, with the promise of a satisfactory result. Also, when the patient is found poisoned by purulent infection, I should not hesitate to recommend the subcutaneous injection of antistreptococic serum, and the adminstration of cathartics which have the power to produce watery alvine evacuations. For this latter purpose the sulphate of magnesia would stand foremost. Also digitalis, and frequent draughts of water, should be used to induce copious diuresis, thereby discharging ptomaines, as would the catharsis just mentioned.

In the *Journal of the American Medical Association* for April 28, 1900, it may be seen that thirty-six cases of the smallpox (thirteen of which were confluent), were recently treated at Cincinnati by baths of bichlorid of mercury (strength one to ten thousand), the baths being of ten minutes' duration and given twice daily. The good results are said to have been perfect. In the same article it is authoratively mentioned that in the City of Mexico and vicinity two hundred cases of the smallpox had been recently treated by antiseptic baths with perfect success. In none of the Cincinnati and Mexico cases did death take place, and it is said that no marring of the skin occurred.

SHORTENING OF THE ROUND LIGAMENTS AS A CONSERVATIVE ELEMENT IN PELVIC SURGERY.*

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THE practice of conservatism in surgery of the pelvis is becoming endangered by the wholesale manner in which much of the intraperitoneal work in this region is being done. Published reports of large numbers of abdominal operations showing a very low mortality, or none at all, stimulate other surgeons to emulate these records. This begets competition, which, in its turn, induces the unscrupulous, the ignorant or reckless operator to class all cases possible under the head of those needing intraperitoneal operation. The ease with which many of these operations for the removal of organs but slightly diseased may be performed, the usual rapidity of recovery and the low mortality, all combine to make this method of curing slightly diseased organs by removing them, with its consequent fascination, seem legitimate. In their opinion, a slightly enlarged or prolapsed ovary must be removed, a hyperplastic retroverted uterus is either malignant or in danger of becoming so, and must come out forthwith. Treatment other than by operation is their *bete noir*, and plastic operations, with other reconstructive work, too trivial to be considered by them.

This paper is a plea for cases of this kind, as experience has demonstrated to me the fact that the most of them need never be subjected to the sacrificial operation if proper treatment and the necessary minor operations be applied to their cure. In doing this I speak from conviction born of work in this field, as I am becoming more and more convinced, as my work broadens with this operation, that the shortening of the round ligaments is of the greatest value as an indispensable adjunct in many of these cases wherein perfect and complete restoration of parts is so necessary to the achievement of complete cure, and which, if done before the formation of strong adhesions, will prevent the necessity of intraperitoneal work for their relief.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY, at the Mackinac Island meeting, July, 1900.

In this operation no attempt is made to improve on nature by constructing new and elaborate anatomical parts. By it nature's own device is made to serve its intended purpose—the function, which through inherent weakness of construction, was inert, ceases its passive life and begins to act.

In the consideration of this subject the inherent weakness of supporting parts, due to hereditary causes, should not be overlooked. It is a well-known fact that there is great variation in the quality of like tissues in different individuals. The muscle of one is naturally full, firm and resistant, while in another it is just as naturally thin, soft and flabby. The bones of one will be strong and hard to break, and in another delicate and easily fractured. The nerves, blood-vessels, skin, tendons, ligaments and aponeurotic structures all are subject to these differences, varying in texture and consequently in usefulness, in different individuals, from the most perfectly developed tissue, useful in the highest degree in performing its function, to that which is loosely constructed and illy prepared to perform the function for which nature designed it. These deviations from the perfect in nature are no doubt largely, if not solely, the result of heredity. A man with a congenital hernia is liable to beget children with not only a tendency to hernia, but also to other troubles which are induced by a relaxed and yielding condition of the aponeurotic, ligamentous and tendinous structures. Floating kidney, floating liver, ptosis of the stomach or colon, prolapse and backward displacement of the uterus are all examples of pathologic conditions which may arise from this hereditary lack of perfection in construction. Some accident, either slight or otherwise, is usually the apparent cause of many of these displacements of organs, but the inherent weakness of these tissues, which should be made to stand assault, is the true cause; the accident is but an incident. In one of these instances the corset may be the incident; it presses the lower ribs inward and the kidney's supports yielding allow this organ to escape the pressure and drop down into the abdomen. For a time the kidney will slip back into its bed on removal of the pressure, and in some cases it will always do so. In these instances the ligaments do not entirely lose their tone, and as a result we have the "movable" kidney. In some of them the ligaments become permanently elongated and the kidney remains in the abdomen, a "floating" kidney, a source of discomfort and ill-health to its possessor.

The muscle and fascia composing the perineum and other pelvic supports often lack this proper degree of qualitative perfection, and a relaxed, yielding, and nonelastic floor of the pelvis results, with the tendency to cystocele, rectocele, and prolapse of the uterus and vagina. Complete prolapse of the uterus and vagina in women who have never borne children are extreme illustrations of this class. In another class of cases we find the defect present in the round ligaments only, which are congenitally elongated, while the tissues composing the floor of the pelvis being strong and efficient, the uterus is simply retroverted, the strong perineum preventing the usual prolapse. I believe that those cases of retroversion without symptoms, which we occasionally see, belong to this class.

The round ligaments of the uterus must often partake of this lack of structural perfection. In such cases they are either congenitally too long, or their attachments within the inguinal canal are inadequate, thus throwing the tension on the very small and weak distal extremity which would thus be easily stretched. It is only on this congenital theory that the cases of retroversion occurring, without causative accident, in young women and girls, can be explained. The congenital cause is apparently just as marked here as in cases of hernia, and I believe it to be, by far, the principal factor in the etiology of retrodisplacement of the uterus.

The ligament, by reason of its form of construction, being largest and strongest at its uterine attachment and gradually tapering to a very small and nonresistant end at its pubic extremity, is easily stretched and elongated within the inguinal canal unless its fibrous attachments along its course within the canal are firm and unyielding. This, I beleve to be probably the weak point of construction and the cause of the elongated ligaments in these cases.

As a matter of fact, the ligaments are quite often so attenuated at their pubic end that they are found and isolated with difficulty when sought for at this point, and are invariably so fragile that they are liable to break on slight traction. This condition has rendered the original operation of Alexander most unsatisfactory, being often tedious and difficult in the extreme, the mutilation of the aponeurotic structures, in the effort to find the ligament, often causing post-operative hernia, and the breaking of them frequently rendering the operation a failure.

These difficulties were so great that this otherwise valuable operation was falling into disuse and would probably have been abandoned entirely had it not been for American enterprise and ingenuity. A number of methods deviating in technique from Alexander's are now practiced, all, however, but one, being of a mutilative character and endangering the integrity of the aponeurotic structures with the resultant liability to subsequent hernia. The one exception is the operation first described by DOCTOR J. H. KELLOGG, in a paper read before this association at its annual meeting in 1897. It is free from all of the objectionable features of the other methods and is, besides, for any operator who understands its technique, the simplest and most easily and rapidly performed of any.

The operation has been exceedingly satisfactory in my hands, and has yielded most gratifying results in curing a number of cases among a class of patients, the treatment of whom I had regarded with much dissatisfaction, as I realized they could never be cured by pessaries and tampons, though the conditions were not serious enough, in my judgment, to warrant the dangers and mutilations of vaginal or abdominal sections.

These cases are familiar to us all; every general practitioner has any number of these retroversion cases, many of which have been under treatment for years. The displaced, enlarged uterus, capacious vagina distended by years of series of enlarging pessaries, degenerated and cystic cervix, ruptured or relaxed perineum, cystocele, rectocele, et cetera, is the picture presented by many of them.

Instead of applying plastic and other reconstructive operations to these cases, it has become the fashion of late, in certain quarters, to cure them by the operation of vaginal hysterectomy. Especially is this the case if the Fallopian tubes have become sensitive from the long continuous venous congestion which is usually present with these conditions, and which will right itself if given a chance by the replacement of the organs.

Shortening of the round ligaments alone will not suffice in these cases, but they cannot be cured without the addition of this operation to certain others as indicated in each case, such as curetage, trachelorrhaphy, anterior and posterior colporrhaphy, perineorrhaphy, et cetera.

It is unfortunately easier and more expeditious to perform vaginal hysterectomy on these cases, but ease and dash and rapid work on the part of the surgeon must not be the great desiderata in the treatment of these patients. Rather look to the preservation of the natural organs in their integrity; disentangling and reuniting lacerated and ruptured muscle and fascia so they will regain their lost function, replacing a displaced organ and assisting nature to keep it right by shortening its relaxed natural supports, all sounds complicated and difficult, and visions of much time and hard work are suggested by the enumeration when compared to the five or ten minutes' operation of vaginal hysterectomy.

My preference for the less seductive, less brilliant, and more tedious and arduous method is because it accomplishes the object desired—not by destruction, but by reconstruction; does not subject the patient to danger to life or the frequent accidents of fistulæ of the ureter, bladder or intestine, as is the case with vaginal hysterectomy, and also, because when the patient leaves her bed, she leaves it a perfect woman, and not a neuter gender.

The round ligaments are nature's only anterior supports to the uterine body, and being inserted one on each side of the upper aspect of the organ, at a point where great advantage of leverage is gained, their usefulness in being in such condition as to perform their function adequately is absolutely necessary to prevent the uterus from becoming displaced backwards into the larger cavity of the pelvis. When once in this malposition the natural abdominal pressure, now exerting its force on the anterior aspect of the organ, prevents its return to its normal position. On the other hand, when the uterus is made to incline forwards in its normal position by the elastic traction of the round ligaments, this same abdominal pressure, now striking the organ on its posterior surface, assists materially in preventing any backward displacement.

Complete prolapse of the uterus is usually of necessity preceded by retroversion, for, in the normal position of the organ its long axis crosses that of the outlet of the vagina, so that in its descent the cervix strikes the perineum which resists any farther movement in that direction. When retroverted, however, its long axis then being parallel with that of the vaginal outlet, the abdominal pressure forces it, like a wedge, through the vagina and vulva, the perineum then having very little control over its descent.

Thus it is seen that great force is not necessary to hold the uterus in normal anteversion. A constant, easy traction is all that is necessary, as the abdominal pressure, striking the organ on its posterior aspect, is the greater force which preserves the uterus in its normal position. From these considerations it is apparent that the operation of shortening the natural anterior supports of the uterus has a great advantage over those methods by which it is sought to maintain the uterus in a firm and unyielding position by the formation of adhesions to the abdominal or vaginal wall.

I have already called the attention of the profession to the merits of this operation by previous papers, and I now do so again because I deem it my duty to emphasize still further the benefits to be derived from its use. While its range of applicability is large, it has its limitations, which should be carefully considered in selecting cases to be subjected to it.

The most perfect results are obtained when it is applied to cases of retroversion uncomplicated by intraperitoneal adhesions or diseased tubes or ovaries. Slight adhesions may often be broken up by a proper course of treatment prior to the operation, which can then be successfully performed. The sensitiveness of the appendages due to congestion, in these cases, should not be mistaken for organic and incurable disease requiring extirpation of the organs. It is surprising to see how some of these apparently unfavorable cases will clear up under complete rest and local treatment, many of which on first examination, would be almost surely condemned.

Cases in which apparently normal tubes and ovaries are more or less adherent to the uterus whose replacement is accomplished with difficulty with a tendency of the organ to return immediately to its malposition, are not ideal cases for the operation, as the ligaments in many of them can not be pulled out far enough to make the necessary traction on the fundus, and so the results are liable to be disappointing, yet many of them do well under it after a preliminary preparatory course of treatment, or when necessary the abdomen may be opened, the adhesions broken up through the incision, which may then be closed, and the ligaments shortened in the usual manner.

The operation should not be attempted in cases wherein firm adhesions prevent replacement of the uterus or in the presence of pus-tubes or other serious disease of the tubes or ovaries, as these are cases to be treated only by intraperitoneal operation.

As the details for the technique for performing this operation may be found in other literature on the subject,* I will not go over that ground except in a general way.

The operation might aptly be termed "the tenotomy hook method," as it is by the use of the blunt hook in lifting the ligament up through a small puncture in the aponeurosis that the operation is simplified and made so distinctly superior to other methods. It consists, briefly, of the following steps: An incision an inch in length to the depth of skin and fat only, situated about midway between the spine of the pubis and the anterior superior spinous process of the ilium, and parallel with, and just above, Poupart's ligament; separation of the cellular tissue overlying the tendon of the external oblique muscle by blunt hooks and retracting it, with the other tissues, with eye retractors; puncturing the aponeurosis with the scalpel just above Poupart's ligament; introduction through this quarter of an inch incision, of the blunt hook, and the withdrawal of the ligament; severing the fibrous attachments of the ligament to the tissue within the inguinal canal, and drawing the ligament through the internal ring; piercing the aponeurosis in two places and drawing the loop of ligament through them, and after folding this back on itself, making it fast by one buried suture; closing of the wound by superficial, fine catgut sutures and sealing with iodoform collodion reinforced with gauze. This, in short, is the operation performed by me. As it has the merit of being entirely devoid of danger, either to the integrity of the parts or the life of the patient, even in the event of sepsis or other accident, it must be the operation of selection. It should especially be preferred to that of ventrofixation in all cases in which reposition of the uterus is not prevented by adhesions. The contrast of the relative danger to the life of the patient, between the two operations, is so great that there should be no question on this point. Compare it also to the other methods of performing the Alexander operation, in which it is necessary to make a long incision, open up the whole inguinal canal, sever the pillars of the external ring, cut away the redundant part of the ligament, and at last sew up all of this mutilation of important structures by the use of many stitches (buried and *en masse*), the giving way of which by reason of sepsis or other accident, renders the occurrence of subsequent hernia almost certain. The one is simple and safe; the other complicated and dangerous to the structural integrity of the parts.

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*"A certain and Successful Method of Shortening the Round Ligaments," by J. H. Kellogg, M. D., "Transactions Michigan State Medical Society, 1897."

"A Simple, Effective and Esthetic Operation for Shortening the Round Ligaments," by H. W. Longyear, M. D., "Transactions American Association of Obstetricians and Gynecologists, 1899."

The latest addition to the complexity of method in dealing with the round ligaments comes from Chicago, and is fathered by a most able surgeon, DOCTOR A. GOLDSPOHN. He makes an incision nearly three inches in length, opens the inguinal canal from, and including, the external ring to the internal ring, lifts up and isolates the round ligaments, dilates the internal ring, incises the peritoneum and enters the peritoneal cavity through this opening for the purpose of breaking up adhesions or removing diseased appendages. The redundancy of the ligament is then cut away, the peritoneum closed and several layers of buried sutures used to close the various structures and fasten the stump of the ligament. The author very aptly likens the operation to Bassini's operation for hernia, although it would seem that the latter were the simpler and less formidable. The operation may have its uses, but it would seem that in those cases demanding shortening of the ligaments and in which the abdomen must be entered, a much less complicated method would be preferable.

It is only in rare instances that the shortening of the ligaments is the operation alone indicated. My records show that in the thirty cases on whom I have performed the operation the following supplementary operations have also been made: Curetage, twenty-three; perineorrhaphy, eleven; trachelorrhaphy, nine; posterior colporrhaphy, one; excision of hemorrhoids, three; excision of urethral caruncle, one; abdominal section for appendicitis, one, and for adhesion, one. Twenty-five were free from adhesions or disease of the tubes or ovaries. Ovarian prolapse was present in several of these. The results in this number have been all that could be desired, excepting in two cases in which septic infection occurred, which accident has apparently prevented the adhesion of the ligaments in their new positions, and allowed them to slip back into the abdomen, as the retroversion recurred after the removal of the pessary which I always leave in as a splint to the parts for three months after operation. In the remaining five cases, in which slight adhesions were present, one is very satisfactory, two benefitted but not completely cured, and two not benefitted. Sufficient time has not yet elapsed to warrant a complete report of some of these cases, so I shall not attempt a detailed report at present.

In conclusion, I may say that, properly applied to selected cases, and supplemented by other necessary plastic work, this operation may be made to act, as one might say, as the keystone of an arch, making by its action the completion of the structure—thus fulfilling all the requirements necessary to complete restoration of all displaced parts and so preventing the future necessity of more serious and mutilative operations.

TRANSACTIONS.

MICHIGAN STATE MEDICAL SOCIETY.

STATED MEETING AT MACKINAC ISLAND, JULY 11–12, 1900.

THE PRESIDENT, AUSTIN W. ALVORD, M. D., IN THE CHAIR.
REPORTED BY COLLINS H. JOHNSTON, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR HOWARD W. LONGYEAR (Detroit) read a paper entitled "Shortening of the Round Ligaments as a Conservative Element in Pelvic Surgery. (See page 23.)

DOCTOR J. J. MULHERON (Detroit): I think DOCTOR LONGYEAR is to be congratulated upon the brilliancy of his results, although I think those results are not corroborated in the practice of others. The doctor has modified the usual Alexander operation. It is a notorious fact that the Alexander operation has fallen into disrepute. I find in the classic work of KELLY, for instance, that there is not even the slightest mention made of the operation. If DOCTOR LONGYEAR has added something to the Alexander operation which makes it desirable, he is certainly to be congratulated and the profession is to be congratulated upon the results of his experience. The replacement of the retroverted uterus by operation, or by the use of pessaries, is one of the most unsatisfactory in our experiences, and it might not be out of order, as the subject of the replacement of the retroverted uterus is properly under discussion, to permit the discussion to go, perhaps, a little beyond the bounds of that prescribed in the paper. Personally, I much prefer the Wertheim method. I have tried this Alexander method and have experienced difficulties which a number of other operators have experienced—difficulties because there are more than one—and my first difficulty was in the detection of the round ligament. I think it is a conceded fact that the round ligament is not always discoverable. You may cut in there and find a practical absence of the round ligament in the inguinal canal, perhaps most frequently due to atrophy, so that it makes it impossible for us to discover it. I have attempted the Alexander operation and having failed to find the round ligament, have been obliged to go in search for it through the Wertheim method. Now, in my estimation the Wertheim operation is the ideal one for replacement of the retroverted uterus through shortening of the round ligaments. This is an operation which never fails because, by electing it, you can find the round ligament right beneath your eyes and fingers, and there is not the slightest difficulty in bringing it up and shortening it. The dangers which attend it are, I think, not any greater than those attending the Alexander operation, with even its modification as suggested by DOCTOR LONGYEAR. We make the ordinary incision in the vaginal wall, open the peritoneum, antevert the uterus through the opening and we have the round ligament brought in sight. We then double it up and shorten it in that way by sutures and return it into the abdominal cavity; and it seems to me that this operation is preferable, principally because of the fact that we never fail to find the round ligament when performing it. I think the great objection to the Alexander method is this difficulty in finding the round ligament.

DOCTOR METCALF (Detroit): I agree in the main with everything that the essayist has said upon this method of replacing and retaining in position, the uterus. The objection raised by DOCTOR MULHERON, that it is difficult and might not be possible to find the round ligament, I think does not hold in the method described by DOCTOR LONGYEAR. I think, from my limited experience in this work, that the round ligament can be found in every case. In the last patient upon whom I endeavored to do the operation, the ligament was atrophied, or rather it had never been developed—the girl was nineteen years of age, the uterus occupied the hollow of the sacrum, the muscle not being exercised by movement—and the ligaments were so small that I broke one in pulling it up and the other was so frail that I did not feel it would be sufficient for the support required of it. Of course the indications for this operation might differ in the judgment of different men. DOCTOR LONGYEAR, it seems, employs it when there are adhesions or diseased ovaries. I have not had enough experience in this and have not had satisfaction in using the operation when the ovaries have been long misplaced with adhesions, even though the adhesions were broken up. I would not, from my present position, have felt satisfied to subject a patient with infected ovaries to this operation, to keep her confined for two or three weeks with so little prospect of recovery. Many of these uteri, although they are retroverted, apparently give no trouble. I think we should attach some importance to the mobility of the organ. If there is any diminution of mobility without adhesions, I think this is a strong indication for the operation. If the woman does not have the symptoms which accompany retroversion, and if there is no prolapse of the tubes, the probability is that we would not have our results in working for repair benefited materially by shortening the round ligaments. Though, when patients take the anesthetic well and no contraindications exist, it seems to be a step which frees the surgeon's mind, making him feel that it might be at least a preventive measure, protecting the patient from subsequent prolapse; and that, as a preventive measure, it is a valuable procedure. If, when the uterus is retroverted and prolapsed, with the abdominal contents pressing upon its anterior surface, the disturbance of circulation which follows must necessarily reduce the resistance of these organs, leaving them more liable to infection. So that I think perhaps as a routine operation upon every patient who has uncomplicated retroversion, it might be wise to shorten the round ligaments. My experience leads me to agree with everything that the doctor has said.

Doctor Lynds (Ann Arbor): I think it requires a great deal of judgment to select cases that are adapted to the shortening of the round ligament. The surgeon who resorts to the measure in every case of retroversion will fail, certainly in the large proportion of cases. There is no question in my mind that some cases are adapted to it; in my experience however, they are in the minority. The greater number of cases of retroversion I believe occur soon after confinement. Not all of them, but the majority of them. The tissues are relaxed; and perhaps before they have gained their tone the patient gets on her feet, the organs settle down in the pelvis, the uterus becomes tipped back and the ovaries become displaced. Now that is the time to look after one's case to prevent these troubles; not by doing the Alexander operation or shortening the round ligaments in any way, but by keeping the uterus up, by pessary if necessary, and by restoring the soft parts if they have been weakened. If there is infection of the uterus, try to get rid of it, and the proper use of the pessary to keep the uterus in place until the supports have recovered their tone will aid greatly in this. In this way a great many cases of chronic retroversion can be prevented. Then, again, in uncomplicated cases of longer standing—but it is usually in the recent uncomplicated case that the Alexander operation is generally acknowledged to be at its best—it is in my mind often a questionable operation. Many of those cases I believe may be cured by the proper use of the pessary when the organs have not been out of place too long; when the uterus is not too badly diseased; when the appendages have not become diseased; keeping the uterus up, employing pelvic massage, and getting rid of indigestion, a certain per cent. of those cases can be cured without any operation. Then there are a few cases which perhaps can be cured by the Alexander operation, which cannot be by the more conservative methods and wherein for some reasons abdominal methods would not be considered advisable.

Doctor Longyear referred to the intestines getting down in front of the uterus, which they do and which is largely accountable, no doubt, for keeping it retroverted. If one could succeed in getting the uterus in place and then getting the intestines behind it the chances are they would in many cases stay there, and in a good many cases probably the uterus would stay up, but that is difficult to accomplish in any way that I know of except by opening the abdomen. Recently I operated on a patient in whom the intestines were packed down in front of the uterus, adhering to the bladder and anterior surface of uterus, so that even after the abdomen was opened it gave me considerable trouble to get the uterus up and the intestines down behind where they belonged. Now in that case I can readily see how shortening the round ligaments would make the patient worse instead of better. As for the preference of shortening the round ligament over opening the abdomen, so far as the danger is concerned in the operation, I think they are on a par; I do not believe there is any more danger if the operation is properly done, in opening the abdomen and bringing the uterus up than in shortening the round ligaments. And it is rare that a case in proper hands fails; I have not known of a death occurring in some years from simply opening the abdomen and bringing and stitching up the retroverted uterus. Then, when the uterus has been retroverted for any length of time, the ovaries and tubes are more than congested; they are nearly always cystic. While I, like Doctor Longyear, do not consider the removal of those organs the proper thing, I do think they need some conservative treatment, such, for example, as removal of the cysts, bringing and keeping them up in their proper position, thereby relieving the congestion and restoring a free circulation in the parts, and they may recover. They do not all recover, I am sorry to say, but quite a large per cent. of them will. And they certainly can be brought up a great deal better with the abdomen opened so the adhesions can all be separated, and if necessary the tubes or ovaries stitched up, if it is necessary to stitch them to keep them up where they belong, than they can be by drawing up the uterus, and perhaps the posterior peritoneum with it, which in a very short time drags the uterus back. I notice that the doctor says that he invariably has his patient wear a pessary for three months after these operations. It appears to me if those adhesions were not there, he would not need to do that. Of course the uterus can be replaced even when there is a good deal of strain on those adhesions, but they are almost sure to again stretch out the shortened ligaments in a short time. Now, there are some cases which are not adapted to bringing the uterus up and fixing it to the peritoneum as, for example, those wherein the abdominal wall is very much relaxed; here the uterus may drop backward and take the abdominal wall with it. In such a condition shortening the round ligaments intraperitoneally or through the inguinal canal, if you choose, would be more adapted to the case, but as I say I think it requires a great deal of judgment in selecting cases and in adapting your operation to cases you have in hand.

Doctor Kellogg (Battle Creek): I really feel that there is very little to be said upon this paper, except to thank Doctor Longyear for his very able and lucid presentation of a successful method of shortening the round ligaments. I think it is clearly evident that the profession, notwithstanding their neglect of this operation, have confidence in it, from the fact that so many different methods have been suggested for performing the operation. I think the doctor who last spoke struck the keynote when he said the difficulty was to find the ligaments. I imagine there are very few of those who condemn the operation of shortening the round ligaments who would not perform it if they could readily find the ligaments. The method suggested by DOCTOR ALEXANDER is a method by which the ligament can be found only when it is well-developed, and it involves tearing open the canal and pulling out everything that is in it and sorting over, and tearing asunder the delicate structures which are ingeniously contrived so as to prevent hernia; after tearing the structures all apart, to place them back again in a normal condition is impossible.

In the first case upon which I operated some thirteen years ago I was three hours in finding the first ligament. I was determined to find it. I gave the patient as little anesthetic as possible and at the end of three hours I succeeded in finding the first ligament. I was about half an hour in finding the next one. After operating on about one hundred cases, I succeeded in finding a better method, which DOCTOR LONGYEAR has described, and now have operated upon some seven or eight hundred cases, and I find the method very satisfactory. The ligament can usually be found by the first dip of the hook when the incision is made at just the right point. If it is not secured with the first dip, the second is almost sure to bring it up. It is only necessary to make the incision at the right point. The incision in the tendon is very small—not over a quarter inch—a mere puncture. The ligament is brought up through the opening and closes it completely; then by a small catgut suture the ligament is secured to the tendon of the external oblique and the opening is closed. The operation requires only from ten to fifteen minutes; one can work leisurely and not consume more than fifteen to twenty minutes. I have failed to find the ligament in three or four cases—I think not more than four in all the cases I have operated upon. The ligament is always there. It is only necessary to approach it right. Frequently a long time is spent in hunting up the ligaments. It is only necessary to make the incision at a point two-fifths of the distance up from the spine of the pubes toward the anterior superior spine of the crest of the ilium. The actual distance varies considerably, as the pelvis is constructed differently in different women, but I think the proper point for the puncture is one-third to two-fifths of the distance from the pubic spine towards the anterior superior spine of the crest of the ilium, and a quarter of an inch above Poupart's ligament. By directing the hook first towards Poupart's ligament, then downward and inward and then turning it up, the ligament may almost always be pulled out at once.

I think the great virtue in this particular method of operating is the facility with which it enables us to find the ligaments. It seems to me that it must be clear to anyone who will give the subject candid consideration that mooring of the uterus by the ligaments is far more natural than attaching it to the abdominal wall. I have operated upon a number of cases that have had ventral fixation performed before, and the uterus was in retroversion just as before the operation. Even in cases in which it is necessary to open tne abdomen and remove pus-tubes, if the uterus is retroverted, I find it well to shorten the ligaments. Formerly I did not do this, but I found patients came back a.ain suffering severely in consequence of retroversion. DOCTOR TAIT assured me that he never pays, any attention to the position of the uterus after the removal of the ovaries, the uterus becoming in a short time so atrophied that it is of no account where it is. This is not always true. I am very much pleased with the paper, and am glad this operation has found such an able champion.

The subject of shortening the round ligaments should be brought to the attention of the profession oftener and more effectively than heretofore. I have yet to see any considerable number of cases of retroversion that have been cured by simply repairing the perineum. When the ligaments have been elongated by long stretching, the most natural method would seem to be to shorten them, and it is very surprising that one should think of doing anything else than to shorten the structures chiefly at fault. Subinvolution of the round ligaments, occurring either after pregnancy or as the result of taking cold at the menstrual period — a menstrual subinvolution as it might be called—is the cause of the elongation of the ligaments in a number of cases. The ligaments are sometimes enormously large when they are drawn up; in some cases half as large as my little finger.

The operation has been ultimately successful in cases in which it at first seemed to fail. In several cases, after removing the pessary, the uterus returned to its *abnormal* position. This was only because the abdominal walls were so weak that they could not hold the intestines up. In these cases it is only necessary to keep the patient under care until the abdominal muscles have become well developed so as to furnish good support for the viscera. I find it essential to lift up and support the lower abdomen by a spring supporter, and to examine the patient frequently so that the uterus may be kept in position until the intestines have an opportunity to adjust themselves behind the organ. I met last week a lady upon whom I operated two years ago. When she went home I learned from my assistant that the operation was considered a failure. When the pessary was removed six weeks after the operation the uterus went right back into the hollow of the sacrum. I did not learn until last week that the patient went home with the understanding that her operation was a failure. When the patient came back she said she wanted something done for her because the operation had failed. I examined her and I found the uterus in perfect position. Nothing had been done for her surgically since she left the hospital two years ago and yet the uterus was in perfect condition. Pelvic massage and the application of the sinusoidal electrical current to the abdominal muscles and gymnastics for developing the muscles of the trunk were the only measures employed after the surgical operation. As the patient had become strong and well the uterus had regained its position and the woman was cured. I recall a number of cases in which I thought the operation had failed, but by persistent treatment, by developing the abdominal muscles by gymnastics, massage and electricity, the operation has finally succeeded. In looking through my statistics I find at least ninety-five per cent. of the cases can be reported as successful. I have met cases that I operated on ten or twelve years ago, and I find them still in perfect health, and in several instances the patients had borne children; in one case the patient had given birth to four children and the uterus remained in good position.

Doctor Longyear: **Doctor Mulheron** says very truly that **Kelly** does not even mention the Alexander operation of the shortening of the round ligaments in his work; but we all know that **Doctor Kelly** is the originator of the ventrofixation method and a very strong advocate of it, and that may account for the fact. I do not blame him, or any one else, for not endorsing the Alexander method, because I think it is an exceedingly unsatisfactory operation, as by it, it is difficult to find the ligament. I mentioned that in my paper. **Doctor Mulheron** spoke of the Wertheimer method of shortening the round ligaments through the vaginal incision. That may be met with two objections: one is that it means the abdominal method, as the peritoneum must be opened; another objection is that it shortens the ligaments at their strongest part, that is, at their uterine end, where they are large and heavy, and you want to make that portion of the ligament stand the strain, that you wish to put on it. Consequently you should take up the slack at the small end, and thus make the whole ligament strong. If you shorten the large end you cause the strain to fall upon the small and attenuated part, which will stretch more and more unless the attachments in the canal are exceedingly strong, which I have found to be the reverse in these cases. Hence that operation, it seems to me, should not be selected in preference to this one, as this method is so easy and success by it so certain. We do find the ligament. It is almost always found without difficulty. **Doctor Kellogg** says in three or four cases upon which he has operated he did not find it, but the percentage of such cases is so small that it only makes the exception to the rule. I failed to find it in but one case, and that was where the subinvolution of all muscles and tissues was very marked so that they were exceedingly flabby and relaxed. The aponeurosis was like a piece of thin wet linen and could be drawn up through the womb, so in searching for the ligament I undoubtedly went wrong because of this unusual and faulty condition of the parts. The patient was very portly, and between the two conditions I did not find it, but I am treating her and expect to make another trial for it. I had already done a number of opertions upon her at the same sitting, so I did not spend a great deal of time when I found difficulties in the way. That is the only case in which I have failed to find the ligament. I think **Doctor Metcalf** misunderstood one part of my paper. I do not operate when there are diseased ovaries. I did say that some cases had prolapsed ovaries, but they were normal in contour, so that I did not think it necessary to remove them. When there is simply prolapse of the ovaries without adhesions or disease, I think the operation may be done and is usually successful in assisting the ovaries to keep their place by raising up the uterus and preventing the pinching of the ovaries between the uterus and the rectum, which will take place in some instances. So far as operating when there are adhesions is concerned, I said in my paper that the cases with adhesions were not ideal cases for the operation; if there are adhesions, that are slight, I put the patient, whenever possible, to bed for a month and treat the adhesions by complete rest and other methods and then, if the uterus cannot be easily replaced, I do not do the operation; I do something else. It is likely that in some of my first cases, three perhaps, I might not have been as wise as later experience has taught me to be, as adhesions in them have prevented entire success. DOCTOR LYNDS spoke of curing these cases of retroversion, taking them after childbirth. So far as my own experience is concerned in treating old cases of retroversion, trying to cure them by childbirth I must say it has been very unsatisfactory.

DOCTOR LYNDS: I said, to prevent the occurrence of the chronic cases, to prevent them from becoming chronic.

DOCTOR LONGYEAR: You mean to prevent the occurrence of the retroversion originally?

DOCTOR LYNDS: Yes.

DOCTOR LONGYEAR: I never have seen a case of retroversion which was present before the time of confinement but would return after confinement in spite of all treatment you could give it. These cases can be treated successfully only by shortening the ligaments or by some other surgical method.

I do not think the doctor means perhaps quite what he says when he states that there is no more danger in opening the abdomen to replace the uterus than in doing the round ligament operation. So far as statistics are concerned, they certainly will not uphold him in that contention. We know, if it is not in our own practice, we know it in the practice of others, that accidents do occur in the smallest kind of abdominal operations, accidents which cannot be foreseen. But suppose something of that kind should result disastrously once in a while; it may be once in a lifetime to the operator who is doing it, but if he should have done the extraperitoneal operation he could have saved the accident, and I think for this reason it is his duty to to do it whenever he can, in preference to the intraperitoneal operation, if it accomplishes the same object. I know DOCTOR KELLOGG makes the incision by measurement, but in my experience I have hit upon another method which I have found much simpler and very accurate.

I first locate the crossing of the femoral artery and Poupart's ligament, which point is just below the internal ring. I then begin the incision half an inch inside of this point and carry it forward just above and parallel with Poupart's ligament. In this manner I find it can be done very quickly without making measurements. Then before I make the puncture I always try to correct a malposition which may have been produced, a malposition on the field of the operation, that the assistant may have made by pulling the retractors one way or the other away from the line of incision. I do this by striking a straight line from the superior spine of the pubis to the superior spinous process of the ilium. Then I make the puncture directly under that. One of the members has asked if the ligaments stretch out afterwards. I do not think they do. As far as my experience is concerned, they apparently do not. And there are cases reported, a good many cases, wherein confinement has occurred after this operation has been performed and the uterus afterwards has retained its normal position of anteversion, which would prove that the ligaments not only had enlarged as the other parts of the uterus do, as well as all the other genital organs also, with pregnancy, but had then involuted back to their natural length with other tissues.

DETROIT MEDICAL SOCIETY.

STATED MEETING, OCTOBER 17, 1900.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR WILLIAM H. POOLE read a paper entitled "Hygiene of the Eye." (See page 595).

DOCTOR PARKER: Too much cannot be said against the popular idea of putting flaxseed and eye lotions and things of that kind into the eye. The old eye cup is another thing that should be relegated to the shelf never to be used again; also the habit which is very common among our patients, that of opening the eyes and closing them repeatedly in solutions in which, perhaps, they have washed their faces and which contains material of all sorts. Nothing could be worse than opening and closing the eyes for the removal of foreign bodies. The wearing of dark glasses is the next thing that occurred to me that should perhaps be thought of for a moment. In all inflammations in either the anterior or posterior part of the eye, the dark glasses should be used. If we use dark glasses when the eye is in its normal condition we simply educate the eye to resist that amount of light. The question of nearsightedness is a great and serious problem. My understanding of the matter is not quite as DOCTOR POOLE stated it. I happened to be working under DOCTOR RISLEY, of Philadelphia, shortly after he did his large amount of work inspecting the effect of glasses upon myopia in poor children. The absolute amount of nearsightedness is now less than it was twenty years ago. This demonstrates the fact that glasses should be worn and constantly, in cases of nearsightedness. Another thing that we often observe in regard to glasses is that our patient can see a normal distance. There can be no doubt whatever that a fully normal vision as to distance is no reason for not wearing glasses. As a matter of fact the small amount of defects also produce the worst effects sometimes. Certainly too much cannot be said against cleaning the ears with all kinds of implements.

DOCTOR EMIL AMBERG: It is regrettable that the impression exists with the laity that little can be done in regard to the hygiene of the ear. We know through the connection of the ear with the throat that very much can be done; naturally there exists a connection between the eye and the nose as there is also between the nose and the ear. Hygiene of the ear concerns frostbite of the auricle. The piercing of the lobule must be considered too. So should the use of the telephone in public places be considered. Care should be taken with the ear when taking a bath. It has been advised that cotton be used. Absorbent cotton is not desirable. A kind of cotton serviceable for the purpose is nonabsorbent, such as I show you.

DOCTOR CONNOR: There are two phases to this matter. The eye will endure a good deal and the ear will endure a good deal, of bad light, of bad air, of dust and many other things provided it is made of good material and is backed by a body that is sound and strong, and I do not think that too much emphasis can be laid by physicians at the present day upon the rearing of children, from the time they enter school until they have finished their course, so that they shall have that vigor of body that shall enable them to resist a great deal. As an element in making the American citizen with good eyes and ears too much stress cannot be laid upon it. There are times in life that are critical. I myself knew a young man in whom I was very much interested, who had perfectly normal eyes in every respect. He went to college and worked in confinement under certain conditions, although he was vigorous and strong, and came back with a vision of $\frac{20}{70}$ and yielding of posterior coats of the eye adjacent to the optic nerve. Under proper care I think he has a vision now of about $\frac{20}{30}$. There is one thing that has not been mentioned which occurred to me, that is, inflammations of the eye and the ear directly due to swimming. Some of them are severe and some are light, but are apparently due to the affected ear and I suspect that these organs are sometimes diseased beforehand, but people do not know anything about that. I presume the driving force of the wave against the ear has just the same effect as strong current of air in the ear. If defects of refraction of every kind were corrected as early as they could be, and kept corrected, the chances are that there would be very few of the grave diseases of the internal part of the ear. In reference to the ear, as I understand it, it begins at the opening of the nostril and ends at the mastoid process. Anything, that is, dust and wind and morbid conditions of various parts may affect it.

DOCTOR GOUX: I think it should be made compulsory that every child upon entering school should be given some test in regard to his vision. Knowing the effects of study and application in myopia the early correction of it would certainly be very far-reaching. It seems to me that it is bound to come in time that every child on entering school shall have his vision tested and if there is an error of refraction it shall be corrected. If the ametropia is progressive, it is possible that the progress may be inhibited. In regard to the hygiene of the eye there is one point which I believe was not mentioned, that is, the habit which some people have of pulling out the eyelashes. They suffer from some little irritation of the eye and frequently thinking that it must be a twisted hair which is annoying them, they immediately proceed to destroy the eyelashes, thus removing the protection which nature has furnished.

DOCTOR SUTTIE: DOCTOR POOLE mentioned the fact that ophthalmia neonatarum is very much less common in America than it is in Europe, and gave the credit to the American physician as being more highly attentive. I do not think the credit lies altogether there. Those who have given the matter thought will recognize at once the cleanliness of the American citizen; it is really the cleanliness of the American more than it is the better attendance of the physician.

DOCTOR EUGENE SMITH: The only part of tonight's program which affects me unpleasantly is the fact that there are so few general practitioners present to hear it and to profit by it. In my experience of many years I have never seen a single instance wherein inflammation of the ear has followed cold water getting into it from swimming when there has been no trouble with the ear previously, for instance a perforation of the drum membrane, but I have seen innumerable instances in which the cold following the bathing, as suggested by Doctor Connor, has affected the ears, and rather through the nasal pharynx than directly through the external ear. I have seen many instances of children whose vision apparently was normal when they began attending school but whose parents were myopes. I think it the duty of the physician in treating families that are myopic to call their attention to the eyes of their childen in school.

All that has been said in regard to school hygiene I most particularly emphasize. In regard to yellow shades, it is the worst color that can be put to a window. Yellow curtains should never be hung at the windows of a schoolroom in which children sit or study. A pure white shade is sufficient in every instance. The blackboards retain a considerable amount of light. The suggestion made by Doctor Pasternacki that the blackboards shut out a certain amount of light is a true one. A curtain of the same color as the light walls should hang over it when not in use.

Doctor Poole: I heartily indorse all that has been said in discussion. In regard to Doctor Pasternacki's question relative to how far a school should be from other buildings, I simply stated that it should be far enough to secure sufficient light, stating that the light should bear a certain percentage to the floor space. Doctor Connor's idea of the vigorousness of the body is all right. You cannot have a sound mind without a sound body; you cannot have a sound individual organ without a sound body. As to the inherited predisposition, as spoken of by Doctor Smith, I had that in mind but did not mention it except as to the influence that school life had in bringing out this condition. In regard to the blackboards, I found the majority of them in use at present of slate. As to the shades, you will find that in a majority of the buildings they are a kind of straw color or a little darker. It is really the worst kind they could have. Some of the others are of a deep opaque shade, which are too dark to admit light. A great many of the schools have peek-a-boo curtains so-called, across the lower end of the sash; some of which hang there until they become quite filthy.

STATED MEETING, NOVEMBER 28, 1900.

The President, CHARLES T. McCLINTOCK, M. D., in the Chair.

Reported by LOUIS J. GOUX, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor Theodore A. McGraw read a paper entitled "Obstruction of the Bowels." (See page 8).

Doctor William Greenshields, of Romeo: The food as it passes through the intestines undergoes change, physically and chemically, each kind having a characteristic action on the bowels, and the surface with which it comes in contact is also of different activity. It is necessary to health that the food must be changed in the intestine. The food entering the duodenum becomes changed by the secretions into its proximate parts, and these proximate parts cannot be absorbed in a mixed condition. They act dissimilarly on the intestines, hence the intestines must be dissimilarly affected by the obstruction of the bowels. Excessive efforts to force an obstruction creates excessive contraction, so that the bowel above the constricted part becomes hypertrophied. Such changes as these occur even in cancer of the esophagus. In all cases diagnosis of obstruction of the bowels is easily distinguished from the presence of a tumor.

Doctor Henry O. Walker: The records show that the percentage of deaths following intestinal obstruction has been appalling, but now there is a lower mortality. Four or five years ago the record was eighty to ninety per cent. of deaths from this cause. We should always be on the alert and when we have a case of persistent vomiting with other symptoms and indications that there is something seriously wrong in the abdominal cavity, make a diagnosis and immediately proceed to relieve the patient if possible.

Doctor Robbins: Pain was a minor symptom in the case reported. All the text-books on that subject that I have looked over say that intense pain is a marked symptom, but this patient when I saw him on Thursday had but little pain. He had a slight sensation of nausea. At that time his pulse and temperature were normal. On Friday his temperature was not over 99°, while the pulse was normal and there was no fecal vomiting. Not until Saturday did the pulse begin to rise. On that day he began to show that he was sick. He gradually grew worse from Saturday until the next Monday. In this case we delayed a little too long owing to the normal pulse and the absence of pain. The question is what was the condition present? Probably it was volvulus. In this case the volvulus had disappeared, but instead of untwisting and thereby relieving the patient there was no tendency for the volvulus to become straightened, and finally, as the contractions from the attempts to move the bowels, became great, a more complete closure ensued, pain arose and the bowels became distended. The point of contraction has been determined by seeing two distinct lines across the intestines, two and one-half or three inches apart.

Doctor Metcalf: Several times have I been called to operate for obstruction of the bowels and found a clear case of septic peritonitis. An unusual case which impressed itself on my mind was one wherein a woman during pregnancy, or shortly after conception, contracted gonorrhea. The child was born at full term, the tube became attached above the umbilicus near the spinal column, and after involution was dragged across the loop of the intestine and constricted, causing absolute obstruction. I have seen no mention of another such case. In a case to which I wish to call your attention because of the method of relief, which was satisfactory, an abscess had formed from leaking of the left tube, involving a looped intestine and causing a complete obstruction. The difficulty which presented was to determine what part of the intestine was in the bowel and how to relieve it. The question was solved by supporting the intestine above the abscess and inserting it in the loop of the intestine below the abscess. The adhesions were so extensive that it was impossible to determine in which part of the intestine the anastomosis was made. The patient completely recovered and is now well. If after the death of the woman an autopsy should be held some physician may report a case of "appendicitis." The small part of the intestine is left, leaving a pouch which will probably contract down. I made a mistake in diagnosis in this case. I thought the patient had obstruction of the descending colon but passing a long rectal tube measuring three-fourths of an inch in diameter and fourteen inches in length with a light at the end, far up the ascending colon I could see no change whatever. Examining the contents of the stomach in this case showed pepsin and hydrochloric acid.

Then I thought it was a malignant growth somewhere in the abdomen· Abdominal section, however, revealed stricture of the descending colon.

Doctor Carstens: Doctor Greenshields brought out a point which I think is quite important, the compensatory hypertrophied development. There may be extensive stricture without any symptoms. Last year I had two cases in which the compensatory hypertrophy of the intestinal walls was remarkable. These patients evidently had this condition developing for a year or more. One gave a history of two years with no serious premonition until suddenly, acute symptoms developed, which were very deceiving as though they indicated an acute invagination, or a severe inflammatory condition. On examination this hypertrophied condition was found a stricture, which would not allow a pencil to pass through it. Sometimes a surgeon is called upon to operate for obstruction of the bowels and finds only a case of appendicitis. Often there is no obstruction of the bowels at all. They are simply paralyzed by large doses of opium, and the vomiting is purely of asceptic origin. Such cases are deceiving and must be borne in mind. Malignant growths occur on almost any part of the body. I once had a case in which there was a malignant growth between the stomach and the transverse colon, yet there was no obstruction. This growth had flattened out. The transverse colon caused symptoms; by removing it the symptoms afterwards disappeared, although the man died later from recurrences. I think these cases must be handled early. I had a patient a short time ago who had been in the hospital without any effort being made to relieve him, but he had been subject to the usual treatment of calomel, soda, et cetera, and was absolutely starving. He was weak and run down, and I did not think an operation would be beneficial. I made gastroenterotomy but the man died soon after. If it had been done two weeks earlier he would probably have been relieved even though the growth could not have been removed.

STATED MEETING, NOVEMBER 7, 1900.

The President, CHARLES T. McCLINTOCK, M. D., in the Chair.

Reported by LOUIS J. GOUX, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor Alonzo Bryan read a paper entitled "The Pathology and the Antiseptic Treatment of Smallpox." (See page 19).

Doctor Carrier: A point of particular interest in the consideration of smallpox lies in the fact that this is a disease which has been characterized by such a great mortality and one in which the results have been manifested by such severe scarring. It is a disease from which the horror has been removed to some extent by vaccination; and yet at the present time, it is appalling that there should be so many people unvaccinated, and thus liable to attacks of the disease. A peculiarity of smallpox lies in the fact that no matter how mild the attack may be, a person taking it from the patient may experience a severe form of the malady; in this it differs from other contagious affections. As to whether the disease is caused by specific germs or not is a debatable question at the present time. There must be something about it that is specific or it would not be contagious. Anyone who has attended a severe case of smallpox knows that the whole mucous membrane is affected by these lesions just as much as is the skin, and it scarcely seems possible that infection from them could occur or that the disease could be benefitted by the application of a local remedy. Someone has said: " If the disease lasts for seven days it is due to secondary infection, but the development of the pustule is the result of the specific disease and not of the germs." DOCTOR BRYAN must suppose that pus-producing germs are present in all cases. These germs have been present in enough cases to show that they stand in the relation of cause and effect. Most authorities claim that the infection enters the system through the respiratory apparatus and not often by contact. Cases are on record in which individuals have contracted the disease by occupying rooms wherein a preceding case had occurred two years previous. Of the cases that have occurred in the city of Detroit, I think only two have died of hemorrhagic smallpox. I believe a great deal can be done toward the prevention of scarring by the removal of the crust.

DOCTOR MANN: It seems to me that all we know of the source of smallpox is that it is a process originating in the upper superficial and the middle cells of the integument. DOCTOR BRYAN maintains that this disease ends in the vesicular stage, that it does not attain the suppurative stage, and that it is transmitted through the epidermis. We have evidence of numbers of cases wherein there has been no possibility of infection through the skin. I think it would be necessary for the doctor to show us a case of infection from pus-forming microbes. I cannot say that I agree entirely with DOCTOR BRYAN's theory regarding the nature of the suppurative stage of smallpox; I think, however, he has called our attention to a very useful part of the therapeutic stage of the disease.

DOCTOR DONALD: There is a close relationship between varicella and variola. Speaking from my clinical experience I protest against the idea that they are one and the same. There are two distinct types of the disease—variola and varicella.

DOCTOR TROY: I believe that smallpox is caused by a specific microorganism. I cannot conceive how any infectious disease that requires a definite period of incubation can originate from any other source. The question of immunity, which is of so much importance in all infectious diseases, was demonstrated first and best in smallpox. When a case of smallpox is discovered, as it will and should be, the only treatment will be serum. It matters not how much smallpox is treated, an ideal treatment seems to be no nearer attained. The essayist mentioned his treatment, having especial reference to the eruption. It is, however, a well-established fact that smallpox may appear and run its course without the slightest sign of an eruption to indicate the nature of the disease. Regarding this, I have never seen a case myself that could be so designated, but DOCTOR GIBBES has informed me of an autopsy held in a case of this kind, the staff of the hospital having already seen the case. The patient had died after four or five days of severe illness, and not until the autopsy was the nature of the disease determined, and of the men who were present, I think eighteen contracted the disease, the majority of them dying. I have seen one case of hemorrhagic smallpox, and the patient did not have the slightest trace of an eruption such as would be expected to be seen in smallpox. DOCTOR CARRIER brought out that hemorrhage in the smallpox lesion is not hemorrhagic smallpox. Some cases of hemorrhagic smallpox have no lesions. The first thing noticed is a slight redness on portions of the body, that become deeper and darker until it is almost black—the number of these ecchymoses indicating how dark the whole body may become. The mucous membranes bleed more or less freely.

In the case that I saw the young man was taken severely ill with pneumonia and vomiting, which continued a day or two, his mind then becoming affected. In cases of hemorrhagic smallpox, vaccinaton seems to be almost useless. As to the relationship of smallpox, it is a well-known fact that all infectious diseases come in waves of more or less malignancy. Regarding the treatment, I do not believe we will ever have an effective one until a serum therefor is discovered. Taking into consideration the probability that the disease is due to a microorganism, it would seem that the treatment must be along the line of serum therapy.

Doctor Schmalzriedt: While treating some cases of smallpox I saw two cases of varicella, and one which having been wrongly diagnosed varicella resulted in a brother and another sister of the patient taking smallpox. There may be a possibility of an interrelation between varicella and variola, but I doubt it. Regarding the advance rashes of which **Doctor Carrier** asked me to speak, I would say that most of the cases were not seen until the papular or vesicular stage, but in those cases wherein I have seen the advance rashes—two being of the confluent type—the papula followed within a few hours after I saw the rash, and it did not resemble the rash of any other disease, with one exception in which I would have made a diagnosis of scarlet fever had I not known that the patient had been exposed to smallpox. Concerning the hemorrhagic type, two forms are known—the hemorrhagic smallpox and the hemorrhagic pustular smallpox. The hemorrhagic is usually fatal within four or five days. I once had a case of hemorrhagic pustular smallpox in which the vesicle and pustule had formed and hemorrhage had taken place into the pustule. This case lasted nine days. As to the external treatment of smallpox, the most important duty of the nurse is to keep the external serface clean.

Doctor Bryan: I wish to allude to the question of the infection of the mucous membrane. The mucous membranes in smallpox, according to my observation, and I have had extensive observation, are not seriously affected. The membrane of the eye is continually washed by a normal solution, the tears, purulent infection being prevented thereby. Even this slight optic eruption is more severe than that which occurs in the mouth and in the alimentary tract. There never are any very severe hemorrhages from the bowels in cases of smallpox, although I cannot say that there are none. To call your attention to the occurrence of the purulent infection, I would like to answer the question: "How is that evolved?" Purulent infection is evolved through the medium of germs on a denuded surface in the vesicular stage. True smallpox proceeds only so far as the vesicular stage; consequently, true smallpox, if nothing interfered with it, would be a mild disease by which few lives would be lost.

EDITORIAL ARTICLES.

A CENTENARY MEETING.

The end of the century was celebrated by the Detroit Medical Society by a centenary meeting held December 19, 1900. The theme of the evening was the advancement in medicine and surgery and an acknowledgement to the medical benefactors of mankind.

Doctor N. W. Webber gave local coloring to the occasion in the introductory address on "The Old Doctors of Detroit and Michigan."

The names of WILLIAM BEAUMONT, who made his observations upon ALEXIS SAINT MARTIN, at Mackinac, ZINA PITCHER, ABRAM SAGER, RICHARD INGLIS, H. O. HITCHCOCK, A. B. PALMER, WILLIAM BRODIE, FOSTER PRATT, GEORGE E. FROTHINGHAM, CHARLES J. LUNDY, DAVID FARRAND, and some among the living were repeated with the veneration that comes of tender memories, and their characteristic qualities recalled.

FRANK T. LODGE, Esquire, discoursed upon "A Half Century in Medical Jurisprudence." He reviewed the gradually increased legal restrictions which have been thrown around the practice of medicine in nearly all the states and referred with pride to the enactment of the Chandler bill in Michigan. Next, after relating the origins of the ridiculous "boy of fourteen" and the "wild beast" theories of emotional insanity, he traced the successive steps of advancement to our present conception of this subject and its aspect before the courts. The rise, development and decline of the medical expert were historically considered and mentioned as important changes in the realm of medical jurisprudence.

DOCTOR H. O. WALKER addressed upon "The Surgical Progress of the Nineteenth Century." The early history of surgery was hastily narrated and the status of the art at the beginning of the present century defined. "To sum up briefly the surgeon of 1800 was a good anatomist and possessed great manual dexterity with indifferent technique, no knowledge of pathology or the prevention of sepsis, and with but a dream of anesthesia." The beneficent discoveries of that American trio, JACKSON, MORTON and WELLS, and of LISTER were commemorated, the memorable and heroic achievement of McDOWELL extolled, the surgical services of MOTT, PHYSICK, DANIELLS, BUCK, VAN INGEN, FLUHRER, LITTLE, SAYRE, PHELPS, WYETH, MURPHY, SIMS, SENN, KINLOCH, BOBBS, VAN HOOK, PARKER, BIGELOW and other Americans called to mind, the discovery of ROENTGEN noted and the great contrast in medical books, journals, libraries, colleges, hospitals and training schools at the beginning and end of the century set forth. Especial attention was directed to the part that the United States had taken in the real progress of surgery. The national rivalries and jealousies which precluded the ready adoption by the nations of Europe of each other's advances offered no hindrance here. All that was good in the discoveries, inventions or theories of others was freely appropriated, as a result of which American surgery has a history of which we need not be ashamed.

"The Medical Progress of the Nineteenth Century" was the topic of an address by DOCTOR V. C. VAUGHAN, of Ann Arbor. Starting with the demonstration by JENNER in 1796 and comparing with it the willful negligence of vaccination and the consequent pestilence in his own shire a hundred years later, he detailed the progress in the control of many of the infectious diseases. The work of PASTEUR, POLLENDER, KOCH, BEHRING and ROUX was spoken of and account given of the enthusiastic reception of ROUX's concurrence in BEHRING's claims for antitoxin, at the International Congress. Again reference was made to the work of BEAUMONT and to his co-workers in the investigation of digestive diseases. He predicted the coming of the day when man would no longer pollute the water he drank, the food he ate, the air he breathed, nor the ground on which he walked. He talked of the discoveries in chemistry and biology, of the hypodermic syringe and of anesthesia and asepsis which have lifted the curse of pain and death in maternity from the daughters of EVE.

"What the future will bring we do not know, but we hope for good things. Civilization has much to do with progress in any branch of science, but sometimes civilization itself becomes diseased. Progress is not always in a straight line. It moves sometimes in curves, and the descent may be as abrupt as the ascent. Witness the burning of the Alexandrian library and the neglect of Grecian art. In our faces are osteopathy, Christian science, free dispensaries, and other problems of great significance to us. We can only hope for the best."

ANNOTATIONS.

THE NATURE OF SMALLPOX AND ITS TREATMENT.

NOTWITHSTANDING that smallpox is supposed to have been recognized in the orient before the Christian era, and although introduced into America nearly four centuries ago, little more than its extreme contagiousness was known about it until Jenner demonstrated the effect of vaccination. During the century now ended vaccination and quarantine have kept the disease within bounds, but aside from vaccinia nothing more than empiricism has been in store for the afflicted patient. It is true antiseptics of various kinds have been recommended and used for several years, but they were designedly employed rather to prevent pitting than to prevent sepsis. In short pustulation has usually been regarded as an essential part of the disease. About six years ago DOCTOR ALONZO BRYAN, of Detroit, pointed out and insisted that smallpox extended to and included only the vesicular stage and that the vesicles became pustular only by accidental infection. From this standpoint he reasoned that by systematic and thorough asepsis not only could pitting be avoided but also the further course of the disease be averted. In his presentation of the matter, now for the third time, in other pages of this issue his views and proofs are set forth. It is unfortunate that greater opportunities were not afforded him to test his views and develop his method of treatment. However, since his first publication others have followed out the idea of antiseptic treatment and submitted their reports, which make it more than probable that the science of this subject has been materially advanced. So far as we are informed DOCTOR BRYAN's claim to precedence in this discovery is justified, and we take pleasure in recognizing it.

PSYCHOPHYSICAL STUDIES.

THERE are perhaps not many points of actual contact between the three learned professions: not many subjects for study that may properly claim their attention to an equal degree. It is true, however, that man in his psychophysical relationship appeals to the divine, the student of law and the physician alike. Indeed art itself is deeply concerned with the manifestations of normal and abnormal qualities and similar bases for study should be patent to the educator and indirectly to all classes of student-workers. Thus far we have all been almost totally engaged with that which lies nearest. In crime we have been dealing principally with the criminal and neglected the causes which made him such. As a nation we spend fifty-nine millions annually on judiciary, police, prisons and reformatories, and in spite of this great outlay only one in four or five is saved from a life of permanent degradation. The same conditions that provoked the first offense operate to cause a relapse in three out of four cases. It is an appalling fact that habitual criminals are on the increase. We must be protected from them, and yet, that which is still more important, they must be protected from the anomalous conditions in which they are born and grow up. Only by the study of normal and abnormal anthropology can scientific knowledge be gained that will turn this current into more healthful channels. In the end much helpful information will be gained that should simplify all branches of study. This field is now being cultivated by numerous scientists and laboratory methods are being used to further their labors. There is, however, no government support and yet it is a science that must inevitably react most favorably when put to practical use. An effort is now being made to establish a psychophysical laboratory in the Department of the Interior and a Senate amendment to the Sundry Civil Bill has already been introduced for that purpose. There are the best of reasons why this move should have been made long ago and it is to be sincerely hoped that suitable provisions be made.

MEDICAL NEWS.

A PATHOLOGIC EXHIBIT.

To the Members of the Michigan State Medical Society:

At the last meeting of the Michigan State Medical Society, it was decided to hold a Pathologic Exhibit at the next meeting, which is to be held in Battle Creek on the 15th and 16th of May, 1901, and the undersigned were appointed a committee in charge. It is believed that this exhibition of pathologic specimens will be a feature of great interest and will prove to be of substantial value. In order that this desirable end may be attained, the members of the Society are invited to contribute specimens which possess interest, either on account of their rarity or because they are markedly typical of more common lesions. It is suggested by the committee that specimens be preserved in a two per cent. formaline solution. Every specimen, if exhibited, must have a concise and clear history accompanying it. Members of the Society are invited to present for exhibition photographs of specimens or of patients showing features of medical interest. The committee further invite the sending of radiographs illustrating the value of the X-ray. In order that the collection may be properly classified and catalogued, members are requested to notify the secretary of the committee of the number of specimens to be contributed and the character of each. Owing to the fact that there is no appropriation of the Society for defraying the expenses of this exhibit, specimens sent by express must have the charges prepaid. Specimens contributed by the members will, of course, remain the property of those exhibiting them. The secretary will cheerfully answer any inquiries and will be pleased to bring any suggestions before the committee.

Signed,
H. O. Walker, Chairman,
A. S. Warthin,
A. W. Crane,
H. M. King,
P. M. Hickey, Secretary,
32 Adams Avenue West,
Detroit, Michigan

RECENT PUBLICATIONS.

REVIEWS.

DISEASES OF THE NOSE AND THROAT.*

THIS book has been prepared, it is remarked in the introduction, rather for the general practitioner and medical student than for the specialist in laryngology. The reader may at once be justly prejudiced in its favor by reason of the eminence of the author both in practice and in teaching, and it takes but a glance to observe in the independent character of the work, that a thorough mastery of the subject and large experience have had much to do with its make-up. The first important thing to be noted is the arrangement of contents, which departs materially from the usual lines. The work may be confusing to some teachers accustomed to the old divisions but the author's style appeals to us, for it seems eminently more logical to study diseases from the standpoint of disease than that of anatomy. This method enables a more comprehensive treatment, although the volume is of large size, containing over seven hundred pages. The several topics are fully handled, separate mention being scarcely necessary. Distinction is made between influenza and la grippe, which is not common. The neuroses of the upper air passages are all considered in a section by themselves. Tuberculosis is treated in a fair but very conservative manner. This chapter is well worthy of perusal by the specialist. The surgery of the external nose and maxillæ has been intentionally omitted. The author has enriched his work by more than two hundred textual illustrations and six colored plates. Those illustrating intubation are particularly interesting and instructive. We are of the opinion, however, that diagrams are usually more serviceable in bookmaking than photographs. Much praise is also due the publishers for the elegant appearance of this volume.

*By Ernest L. Shurly, M. D., Professor of Laryngology and Clinical Medicine in the Detroit College of Medicine; Laryngologist to Harper Hospital, to Saint Mary's Hospital, and the Woman's Hospital; Consulting Physician to Saint Luke's Hospital, Detroit, Michigan; Fellow of the American Laryngologic Association, et cetera. Cloth, $5.00; sheep, $6.00. D. Appleton & Company, 72 Fifth avenue, New York.

MEDICAL DICTIONARY.*

A GOOD modern dictionary means much more than a volume of definitions. It presupposes a proper selection and classification of terms, arranged according to some definite plan consonant with the greatest utility, a system of spelling and pronunciation logically carried out, and a clean cut, but full explanation or description. Such requirements are met by "Duane's Medical Dictionary." Happily it includes pharmaceutic, dental and veterinary terms as well. This work contains also many tables for reference and several plates. The present edition fully conforms to the requirements of a modern medical dictionary.

*By Alexander Duane, M. D., New York. In one octavo volume of 656 pages. Cloth, $3.00, *net;* full flexible leather, $4.00, *net.* Lea Brothers & Company, Philadelphia and New York.

PROGRESSIVE MEDICINE.*

VOLUME II, 1900, is one of the very best of the series called "Progressive medicine," yet published. Surgery of the abdominal viscera, including hernia, by William B. Coley, takes up the first hundred pages, following which topics in gynecology, of great practical importance, are considered at some length by John G. Clark. The third portion contributed by Alfred Stengel, deals with diathetic and metabolic diseases and diseases of the blood and of the glandular and lympahtic systems. Progress in ophthalmology and ophthalmologic therapeutics by Edward Jackson concludes this finely illustrated volume.

*Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo; handsomely bound in cloth; 401 pages, with 81 engravings. Lea Brothers & Company, Philadelphia and New York. Issued quarterly Price, $10.00 per year.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY.*

THE "American Pocket Medical Dictionary" has been such a fortunate publication that its editor felt encourged to bring out a larger work. The new volume may be said to be unabridged in contents and yet it is of a handier size than the usual run of the larger dictionaries. To the numerous valuable illustrations it contains the book owes its name. Editor and publishers alike are to be congratulated upon the splendid appearance it presents.

*By W. A. Newman Dorland, A. M., M. D., Assistant Obstetrician to the University of Pennsylvania Hospital; Fellow of the American Academy of Medicine, et cetera. W. B. Saunders & Company, Philadelphia, 1900.

DISEASES OF THE SKIN.*

THIS work needs no introduction nor comment. The appearance of a fifth edition only two years after the next previous must be very gratifying to both authors and publishers. The new volume bears the imprint of revision, which will maintain for it the place it has long held, namely, that of the standard practical treatise on diseases of the skin.

*By James Nevins Hyde, A. M., M. D., Professor of Skin, Genito-Urinary and Venereal Diseases in Rush Medical College, Chicago; and Frank Hugh Montgomery, M. D., Assistant Professor of Skin, Genito-Urinary and Venereal Diseases in Rush Medical College, Chicago. Illustrated. Lea Brothers & Company, Philadelphia and New York, 1900.

OPERATIVE SURGERY.*

THIS well-known manual appears in a slightly different dress and is enhanced by certain omissions in the old text and illustrations as well as by the addition of more of the author's own views. It is an up-to-date brief manual of operative surgery.

*A Manual of Operative Surgery, by Lewis A. Stimson, B. A., M. D., Professor of Surgery in Cornell University Medical College. New (fourth) and thoroughly revised edition. In one royal 12mo. volume of 581 pages with 293 illustrations. *Just ready.* Cloth, $3.00 *net.* Lea Brothers & Company, Philadelphia and New York.

The Physician and Surgeon

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

A HALF-CENTURY'S PROGRESS IN MEDICAL JURISPRUDENCE.*

By FRANK T. LODGE, A. M., Detroit, Michigan.

PROFESSOR OF MEDICAL JURISPRUDENCE IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE opening of the twentieth century affords an excellent opportunity for retrospection. It is wise to take account at stated intervals; to recount the capital with which we started, its accretions and diminutions, and the present condition of the stock on hand; so that our plans for the future may be wisely and intelligently laid. This is as true in the intellectual as in the commercial world. There is something in the constitution of man which prompts him to welcome the recurrence of anniversaries as landing places in the spiral staircase of his upward progress. Upon them he may pause for a brief space to catch his breath, to look backward at the progress he has made and forward to the heights to which he hopes yet to ascend.

In no department of intellectual effort has the last half-century seen more wonderful development and progress than in the science and art of healing. When one recalls the astonishing discoveries which have been made in that branch of science, it would seem as if the mythical Aladdin had been constantly burnishing his magic lamp and wishing for new wonders, so startling have some of these discoveries been. That most wonderful and delicate machine in the whole universe—the human body—with its complicated framework of nerves, fibres and muscles; of blood-vessels, cells and tissues, all interlaced and interwoven together, has now become a familiar and friendly thing to the skilled physician. The secret storehouses of earth and air and sea have been compelled to yield up their hidden treasures that, from them, the remedies may be compounded wherewith to heal the myriad diseases of the human frame; and, today, the practice of the healer's art—once a thing of empiricism and rule of thumb—has become a highly organized, almost an exact, science.

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* Read before the Detroit Medical Society at its Centenary meeting, December 19, 1900.

While the energetic science of medicine has thus been making giant strides toward perfection, its far more conservative sister, the law, has also seen many changes and has had its share of growth and development. It is the inherent nature of the law to be conservative. Changes come to it slowly. New things must have crystallized into habits, and habits into fixed rules of conduct, before the law takes cognizance of them.

The great principles of human liberty with which our system of jurisprudence is studded as a coronet with stars have not found their place there in a single night. They have had no mushroom growth, but have slowly crystallized through centuries of blood and toil and struggle. The great principles of Magna Charter, about which you and I think little, but which we invoke whenever our personal liberty is assailed, very nearly cost KING JOHN his realm. That bulwark of human liberty against governmental oppression and private wrong, the writ of *habeas corpus*, was fairly wrung from CHARLES II, after years of turmoil and struggle in the House of Commons, which was then just entering its exalted place in the English constitution.

BOSTON MEDICAL
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In our own country, it took fifty years of agitation and five long and weary years of suffering and heroism to write into our national constitution one little amendment which made our nation wholly free and changed four millions of its people from abject chattels to full-dowered human beings whose souls and bodies belong to themselves and not to some one else.

While these great changes have been thus slowly engrafted into our judicial system, the last century has also seen very nearly all of the great fundamental principles of law fixed and determined. JOHN MARSHALL and his great judicial coadjutors have settled nearly all the important constitutional questions, while the broad lines of civil and criminal law have been determined largely during the last half-century.

The science of medical jurisprudence is the golden bond which unites, in happy union, the two sciences of medicine and of law. The physician needs the lawyer, for the law determines his rights as well as those of every other subject. The lawyer needs the physician, for the law is universal in its purview and every phase of human life is touched and covered by it. Hence, as cases of insanity, of death by violence, of crimes affecting the person, and many other phases of medical science are constantly arising in the courts, the physician and the lawyer are frequently called upon to join hands in bringing to light and establishing the truth.

The science of medical jurisprudence, therefore, has grown and broadened with the widening scope of the law; and, it is needless to say that, whenever the law has settled new questions along medical lines during the last half-century, the science of medical jurisprudence has felt a quickening impulse. We cannot be expected to consider many of these questions in twenty minutes. We shall have time to merely glance at a few:

(1) The greater restrictions which are almost yearly being thrown around the right to practice medicine.

(2) The development of emotional insanity as a defense in charges of crime.

(3) The rise, culmination and decline of the medical expert witness.

(1) THE GROWING RESTRICTIONS UPON THE RIGHT TO PRACTICE MEDICINE.

In the infancy of the medical profession, there were absolutely no restrictions, upon the right to practice it. The ignorant old woman with her herbs and simples, the voodoo doctor with his spells and incantations, the midwife with her limited experience gained from having " been there herself," the barber with his lancet and towels, his cups and leeches, alike with the cultured, earnest student of medicine, were entitled to take the money (and, perhaps, ruin the health) of their luckless patients. The common law of England placed no restrictions upon the free exercise of the art of healing. All the restrictions have been made by statutes and the interpretation of those statutes afterwards by the courts. The constantly increasing strictness of such legislation has been the expression of the growing feeling of communities upon the subject; and this feeling, although it has taken a long time to ripen into the broad, restrictive statutes of today, began the agitation for greater safeguards a long time ago. In the third year of the reign of HENRY VIII, a law was enacted prohibiting any person from practicing medicine or surgery in London or within seven miles thereof without having first been examined, approved and admitted by the Bishop of London or the Dean of Saint Paul's, who should call to their aid four doctors of physic, and, for surgery, other persons expert in that faculty. The statute further provided that no person saving those practicing under privileges conferred by the Universities of Cambridge or Oxford should practice outside of London and a seven-mile radius thereof without having first been examined and approved by the Bishop of his diocese or his Vicar-Generals similarly assisted. Seven years later, a charter was granted to the College of Physicians in London vesting in it the right of examining and admitting to practice formerly granted to the Bishop of London and the Dean of Saint Paul's. Other laws relating to the subject were enacted in England from time to time, but, owing to their character, they were not applicable to the conditions existing in the United States, and, consequently, never became law here.

In the United States, the authority of the legislature to enact laws restricting the right to practice medicine to those properly qualified, and providing boards, commissions or other tribunals to determine who are thus qualified, has been repeatedly held by the courts to be included in the police powers of the state. The police power is very broad. It has been judicially defined to be that inherent and plenary power in the state which enables it to prohibit all things hurtful to the comfort and welfare of society. It extends to the protection of the lives, limbs, health, comfort and convenience, as well as the property of all persons within the state; and, to accomplish this end, both persons and property are subjected to all kinds of restraints and burdens. That the practice of medicine is a vocation that very nearly concerns the comfort, health and even life of nearly every citizen cannot be questioned; and to place wholesome restraints on those unprepared to exercise these important functions is, therefore, clearly the right as well as the duty of the state.

Nearly every state has, therefore, made special provisions for licensing and admitting to practice those properly qualified, and has prescribed the qualifications which must be possessed by those practicing medicine and surgery within its borders, as well as provided for certain officers or boards who shall determine whether persons seeking to practice medicine possess the proper qualifications. Time will not permit us to elaborate, but those qualifications may be thus classified.

(1) The candidate must have a diploma from a medical college in good standing, the length of the course being specified in many states. At first the required course was only one year. This term has been gradually increased until now it is either three or four years in most of the states. I am proud to say that the Chandler bill, passed in 1899, has placed this state in the front rank, in this respect, by requiring the course to be four years. Many states also require, in addition, that the candidate shall pass a satisfactory examination before a board of examiners, the subjects to be covered by the examination being frequently specified.

(2) The candidate must pass a satisfactory examination, as in the first class, but he is not required to have a diploma from a medical college. In some states of this class, the time he shall have spent in the study of medicine is specified.

(3) The candidate must either present an acceptable diploma, or, if he has no diploma, he may be examined as to his qualifications to practice medicine and surgery.

(4) The applicant must hold a diploma issued by a proper medical college, which must be satisfactorily shown to belong to him.

(5) Nearly every state makes special provisions for licensing those who had been engaged in the practice of medicine and surgery in that state for a certain length of time prior to the enactment of the law regulating the practice of medicine.

(6) The Indian Territory has a peculiar arrangement, which, in effect, allows the Indians to follow their own customs as to doctors or medicine-men of their race, but the Cherokee and Choctaw Nations require the examination of those not citizens of the Nation who wish to settle therein to practice medicine. The law also requires the candidate to secure the endorsement of four or more citizens of the Nation residing in the vicinity in which he desires to practice, but there is no law protecting the residents of the Creek Nation from incompetent practitioners.

In addition to these requirements, certain other requirements are almost universally imposed, namely, that the candidate shall be twenty-one years of age and have a good moral character and a good general education. Some states further require that he shall never have been convicted of a felony.

Most of the states have not been willing to facilitate the removal of a regularly licensed physician from one state to another. Several make special arrangements for licensing regularly qualified physicians of sister states who change their residences to practice in those states; but, in each case, satisfactory evidence is required of the same, or a similar degree of proficiency as that required to entitle other candidates to practice within the particular state.

These statutes have been the subject of many interesting judicial decisions of which we shall have time to mention only a few. Their constitutionality has been attacked upon the grounds that they invade natural rights, that they interfere with vested rights, that they discriminate against persons engaged in the same business or profession but deny them the equal protection of the law, that they tend to create a monopoly, or that they are *ex post facto;* but these objections have been almost universally held, by the different courts, to be untenable, and the authority of the legislature to enact such laws has been held to be within the police powers reserved to the states.

The terms "doctor," "physician," and "surgeon," as used in these laws, have been frequently construed and defined by the courts, and have been held to be not confined to any particular school, but to be used in the broad sense of one who professes the art of healing. Says one learned judge in a well-considered opinion, "The legal signification of the term 'doctor' is simply a practitioner of physic. The system pursued by the practitioner is unimportant and has nothing to do with the methods of particular systems. Their relative methods must become the subject of inquiry when the skill or ability of the practitioner is to be passed upon, in any given case, as a matter of fact."

Courts of different states have prohibited the following persons from practicing medicine, they not being otherwise well qualified: clairvoyants, midwives, those who practice bonesetting and reducing sprains and swellings and contractions of the sinews by friction or fomentation, Christian scientists, and magnetic healers.

The judicial action of examining boards in determining what will be recognized as the particular colleges whose diplomas will be accepted, and in determining as to the satisfactory character of the qualifications of the applicants, has been almost universally upheld; and their action in revoking licenses, when not arbitrarily exercised, has also been frequently sustained.

(2) THE DEVELOPMENT OF EMOTIONAL INSANITY AS A DEFENSE TO CHARGES OF CRIME.

The defense of insanity in cases wherein persons are charged with the commission of crime has had a progressive development from the early days of English jurisprudence. Six distinct tests have, at different periods in the history of English law, been employed for the purpose of determining the criminal responsibility of the insane. First, in order of time, comes what has been called "the boy of fourteen test." For this we are indebted to Sir Matthew Hale, that great English jurist who settled and determined so many of the fundamental principles of the Anglo-Saxon jurisprudence even of today. "Such a person," said he, "as laboring under melancholy distempers, hath yet ordinarily as great understanding as a child of fourteen years, may be guilty of treason or felony." In the beginning of the eighteenth century, this primitive standard was superseded. One would gladly think that its abandonment was due to the eventual perception, by the judges of the day, that no two states of the mind can be more unlike than the healthy immaturity of a boy of fourteen and the diseased maturity of a lunatic. But, unfortunately, this comforting supposition is not warranted by the later decisions, for the "boy of fourteen" theory gave place to a still more unscientific test.

On the trial of Edwin Arnold, at Kingston, in 1723, for wounding Lord Onslow, Justice Tracey, in charging the jury, said, "a person, in order to be acquitted on the ground of insanity, must be a man that is totally deprived of his understanding and memory, and doth not know what he is doing any more than an infant, a brute, or a wild beast." This test afterwards became known to fame as "the wild beast test."

Just such a lunatic as this, however, never existed, and the only excuse that can be offered for JUSTICE TRACEY's famous dictum is that he merely gave an exaggerated and inaccurate description of the violent and acute mania to which the asylum system of his day reduced all other types of insanity. "The wild beast" theory, however, marks the lowest depth to which the law of England, as to the criminal responsibility of the insane, descended. Its subsequent ascent has been curiously fitful and irregular.

On the trial of HADFIELD, in 1790, for shooting at KING GEORGE III in Drury Lane Theatre, LORD CHIEF JUSTICE KENYON told the jury that the prisoner's responsibility depended on the question "whether, at the very time when he committed the act, his mind was sane." This test afterwards became known as "the sane mind at the time of the act" test. This advance toward a broader view was not, however, long maintained. For, in 1812, on the trial of BELLINGHAM for the murder of MR. PERCEVAL in the lobby of the House of Commons, SIR JAMES MANSFIELD prescribed another test of punishable insanity, namely, whether the accused possessed sufficient capacity to distinguish between right and wrong in the abstract. This test soon became known as the "right and wrong test," and, with modifications, has lived the longest of any of the legal tests of insanity.

But, in the course of time, this test of criminal responsibility was also felt to be inadequate. Scientific observers of the phenomena of mental disease established the existence of a type of lunatic whose general notions of right and wrong were perfectly clear and correct, but who, nevertheless, committed crimes forbidden alike by morality and by law under the fixed belief that their conduct was not only pardonable but even meritorious.

It might well be that such persons deserved punishment, but it was certain that the existing law furnished little guidance as to the principles on which their punishment should be based. This deficiency the present English legal test of lunacy purports to supply. It is embodied in answers given by the judges to questions propounded to them by the House of Lords, after the acquittal of DANIEL MACNAUGHTON, in 1843, of the charge of having murdered MR. DRUMMOND, the private secretary of SIR ROBERT PEEL; and it makes the guilt or innocence of a person accused of crime and defended on the ground of insanity, depend on whether he did, or did not, "know the nature and quality of his act." This test may be called the "sane intellect test."

This test was in full operation in England for about fifty years. It will be seen that it applied the test of disease to only one of the great departments of the human mind—the intellect—and failed to recognize that another great department, involved in all criminal and other acts—the will—might also be the subject of disease. About six years ago, the British Medical Association, recognizing the fact that many persons, although conscious of the enormity of their offense, might, nevertheless, possess wills so diseased as to prevent their refraining from the commission of crime, began a crusade against this holding of the judges, which has not yet reached the results already achieved on this side of the Atlantic.

In this country, the efforts of leading alienists began, at a much earlier date, to make a sensible impression in this respect upon our jurisprudence; and in our own state our Supreme Court, in the case of the PEOPLE *versus* FINLEY, decided in 1878, approved of the instruction given by the trial court to the jury that the respondent would be blameless in law, first, if, by reason of insanity, he was not capable of knowing he was doing wrong, or, second, if he had not the power to resist the temptation to violate the law. This test is now known as the "diseased will test."

JUSTICE CAMPBELL in that opinion, however, with commendable good sense, restricts the defense in such cases in this language, "There is some reason to suppose, from the frame of this record, that what the respondent relied on as 'temporary or emotional insanity' was that convenient form of it which enables a person who does not choose to bridle his passion to allow it to get, and keep, the upper hand just long enough to enable him to commit an act of violence and then subside. If a person voluntarily allows his passion to be indulged until it gets the temporary control over him, he is responsible for the condition in which he thus falls, as a man who becomes voluntarily intoxicated is liable for his drunken violence. It is certainly a strange and unsafe doctrine to tolerate that anything should be deemed innocent insanity which in no way affects the mind or conduct except on the one occasion when it is kindled by temporary anger and subsides with the gratification of that malignant passion."

The "sane mind at the time of the act" theory, as modified by the "diseased will" theory, laid the foundation for the defense of emotional insanity, which has been variously called moral, emotional, impulsive and paroxysmal insanity. It is also known among medical writers as lesion of the will. The peculiarity of this form of insanity is that, while the mental perception is unimpaired, the mind is powerless to control the will; that, while its unhappy subject knows the right and desires to pursue it, some mysterious and uncontrollable impulse compels him to commit the wrong. This moral mania, like intellectual mania, is of two kinds—partial and general.

Instances of partial moral mania are kleptomania or propensity to steal, pyromania or propensity to destroy by fire, dipsomania or propensity to drink intoxicating liquors, and homicidal mania.

"General moral mania," says DEAN'S "Medical Jurisprudence," "consists in a general exaltation, perversion or derangement of function of all the affective, or moral powers. Its subjects are singular, wayward and eccentric. Their antipathies are violent and suddenly taken; their suspicions unjust and severe; and their propensities strong and eagerly indulged. They are generally proud, conceited, ostentatious, easily excited and obstinate in maintaining absurd opinions. They rarely exhibit, however, any signs of derangement in their general conversation. They are often regular, systematic and methodical in all business transactions, and, to all appearance, regular in the use of their intellects. One person sees them in business transactions only, or converses with them when free from excitement, and does not hesitate to pronounce them perfectly sane; another has an opportunity to witness some strange and unaccountable eccentricities of conduct totally irreconcilable with the possession of a sound mind. The facts to which these two persons would testify, if called upon to do so, are apparently contradictory, yet they are perfectly consistent when the form of the malady is known."

One of the first cases in this country in which this form of insanity was considered was the case of the COMMONWEALTH *versus* MOSLER, decided by the Supreme Court of Pennsylvania, in which JUSTICE GIBSON recognized the existence, in some persons, of "an irresistible inclination to kill or to commit some other particular offense," and adds, "There may be an unseen ligament pressing on the mind, drawing it to consequences which it sees but cannot avoid, and placing it under a coercion which, while its results are clearly perceived, it is incapable of resisting. The doctrine which acknowledges this mania is dangerous in its relations, and can be recognized only in the clearest cases."

The defense of emotional insanity was a favorite defense about twenty-five years ago. For a while, we may truthfully say without joking, it "became a perfect mania" with lawyers in murder cases. The famous case of EDWARD STOKES, charged with the murder of JIM FISK in New York City, tended to give this defense popularity, notwithstanding its unlucky result to the prisoner in that case.

The case of CHARLES J. GUITEAU, who assassinated PRESIDENT GARFIELD, is another famous case of this kind, and the result in that case has been frequently criticised by the courts of different states and the medical profession. Many of the latter have expressed grave doubts of the justice of the verdict, claiming that GUITEAU's delusions should have exculpated him, and charging the result to the pressure of public opinion on account of the high station of the murdered president.

At the present time, this defense has fallen into disfavor among lawyers, owing to the prejudice against it among laymen, which inclines juries to pronounce against it and therefore renders it unpopular as a defense. So strongly has it been deprecated that the California Assembly, at one time, passed an "Emotional Insanity bill," which provided that a person accused of the crime of murder who set up a plea of insanity should first be examined for insanity alone without regard to the crime with which he was charged. If found to be sane, he should be tried for murder, the false plea to be considered aggravation of the defense. If, however, he should be proven to be insane, the statute provided that he should be confined in an asylum by the Court and never removed unless his sanity at the time of the murder was proven, in which event, he should be tried on the original charge of murder. A bill was, at one time also, introduced into the Kansas legislature which provided for confining in an insane asylum, one accused of murder and setting up insanity, for the same term for which he might otherwise, if convicted, have been confined in state prison. Both of these measures are, in my opinion, clearly unconstitutional, but they illustrate how far the pendulum of public opinion has swung the other way.

From a medical standpoint, however, the accumulated testimony of many years of experience has established this form of insanity as a fixed and standard type of mental disease which should exonerate its subjects from criminal responsibility.

(3) THE RISE, CULMINATION AND DECLINE OF THE EXPERT MEDICAL WITNESS.

In the earliest period of the English law, that which we now term expert opinion evidence was unknown. Indeed, evidence of any kind, produced according to modern rules, was no part of that primitive procedure. The jurors reached their conclusions, for the most part, from personal knowledge already possessed; and, while they were never quite the same as mere witnesses, yet the information which they received from outside sources was at first not only inconsiderable but was most informally acquired. Gradually, however, the practice of producing evidence in open court came into vogue; and as this increased, the right to rely upon prior personal knowledge became correspondingly curtailed.

This change in the method of producing evidence did not, at once, result in bringing the opinions of experts before the jurors. The opinions which were offered earliest appear to have been those of medical witnesses. This was natural, since medical witnesses have always constituted the most numerous class of experts; and, at that early day, there were few others who could have been called such. But when this class of testimony was first admitted, it was received for the purpose of enlightening the court; and, if it reached the jury at all, it did so through the medium of the court's charge. Thus, as early as 1353, in a case of mayhem tried at Southwark, after the justices had failed to determine from their own inspection whether a wound was mayhem, they ordered that surgeons of skill from London should be called to inform "the King and his Court" on this point.

From these early and crude beginnings, the great body of the law of expert testimony has been built up; and, during the last half-century, it has been recognized as one of the most important branches of our jurisprudence. Its value has been conceded in every court in which issues of fact were tried. Experts have been called to the aid of courts and juries in every conceivable case wherein recondite matters of fact were under investigation with which men of ordinary knowledge were unfamiliar. The object of all trials is to bring to light and firmly establish the exact truth in disputed questions of fact; and, in cases involving questions of skill in the details of trades and professions not generally known, the courts hailed with joy, and welcomed with gratitude, the opinions of expert witnesses. Although it was the fixed rule of the law that the opinions of the witness would not be received in evidence, and that their testimony would be confined to facts within their own personal knowledge, an exception to the rule was made in favor of the opinions of experts. For a long time, although the reception of this evidence was carefully guarded by restrictions thrown around the admission of hypothetic questions and the requirement that proper foundations be laid showing the competence of the experts to give opinions, this class of testimony was very favorably received.

It, however, gradually became manifest to courts and juries that this class of testimony was not always reliable. After making all due allowances for human infirmities which naturally give rise to contrariety of observation, judgment and testimony, it gradually became plain that there was even absolute dishonesty among the so-called experts. Opinions given upon one side under the solemn sanctity of an oath were flatly contradicted by opinions given on the other side under the same solemn obligation of truth as to matters about which there should be but one opinion. Although the law is slow to make changes, these adverse criticisms are now very generally disseminated and expressed in the decisions of the different courts. "At the present time," said JUDGE ENDLICH in a recent address before the Pennsylvania Bar Association, "few judges have a good word to say for expert testimony. In general they agree in condemning it, and the same is to be said of text-books and legal journals." It is now only tolerated because it is hard to do without it. In the recent case of the PEOPLE *versus* SEAMAN, decided by our own Supreme Court, the court says, "Expert testimony is not always the most reliable, but it is often indispensable; its infirmity arises largely from its character. Comparatively, it has little value." In the case of the PEOPLE *versus* SESSIONS, decided fourteen years ago by our Supreme Court, the dissenting opinion of JUSTICE MORSE says, "While expert testimony is most important, it is also most dangerous if not closely hedged and confined within its legitimate province. The disagreement of medical witnesses upon matters that are clearly scientific in their nature—a disagreement too often marked by the line which separates the sides upon which they are employed—clearly calls for the strict enforcement of the rule preventing their speculations and opinions upon matters not scientific." Again, the Supreme Court of Minnesota, two years ago said, "Expert testimony is, at the best, very unsatisfactory, and it is common knowledge that, in nearly every case requiring medical expert testimony, witnesses can be found who will give nearly directly opposite opinions." These are samples of the criticisms now made upon this class of testimony by very many of our courts of last resort. Such are the lamentable facts. It is not within the legitimate scope of this paper to suggest remedies. I may, however, be allowed to mention some of the remedies which have been suggested. They are:—

(1) The appointment by the court, (a) Of permanent experts, who shall alone be allowed to testify on matters within the scope of their profession. (b) In each particular case, of all experts to be heard at the trial, such appointment to be made either by the court alone, or by the court upon agreement of, or nomination by the parties; the examination to be conducted either by counsel or by the presiding judge.

(2) The selection by each of the parties of one, and the appointment by the court of a third expert, upon notice before trial of the fact and nature of questions likely to arise requiring expert testimony, such questions to be referred to, and decided by, the board of experts thus constituted, in advance of the trial; and, upon proof of the facts as submitted, to be laid before the jury as decisive of the scientific or technical questions involved.

(3) The appointment, in any case by the court alone, of a commission of experts to investigate and decide all scientific questions arising in the case, and to present its finding to the trial judge in the shape of a sworn statement, which shall by him be communicated to the jury—the judge being at liberty to call the foreman of the commission to the witness stand in order to answer such questions as may be put to him by court or counsel, suggested during the progress of the case.

(4) The creation of a sort of auxiliary panel of jurors composed of experts, and the drawing, in any case involving scientific questions, of a part of the jury from this auxiliary panel.

(5) The association with the trial judge of an expert chosen by himself who, jointly with the judge, shall preside at the trial, shall direct and control the examination of the witnesses, and shall, at the close before the judge's charge, sum up to the jury, being liable at the conclusion of his summing up to be questioned by counsel of either side with respect to all points not previously developed.

(6) The abolition of the hypothetic mode of interrogation, and the submission, instead, of an agreed and undisputed state of facts to experts as the basis of their opinions.

(7) The application of more severe tests of expert qualification and the restriction of the right to act as expert witnesses, (a) To persons proposed as such by the parties, who, upon preliminary examination conducted by the judge himself shall by him be found qualified. (b) To persons selected from an official roll of experts, either prepared or kept under the direction and supervision of the court, or made up by a prop-

erly constituted public board, upon written and oral examinations, to which every one who desires to become eligible to be called as an expert would be obliged to apply.

(8) The payment of all expert witnesses out of the public treasury.

Every one of these methods has its advocates and opponents, and much has been said against and in favor of each plan. It is probable that the whole truth lies with no single one of them, but that each has elements of value. Certain it is that our present system of expert testimony, valuable as it is in theory, is every day greatly abused in practice, and it is also certain that a satisfactory solution of this serious problem will be found before the next half-century has rolled around.

Such, in very scanty and imperfect outline, has been the history of the development of medical jurisprudence during the last fifty years. The complete history would require weeks and volumes for its faithful recital. Suffice it to say that this development has been the development of every good thing that has been discovered or evolved in the borderland between the sciences of medicine and of law, that many earnest hearts and willing hands have contributed to upbuild and improve our judicial system in this respect, and that the swiftly revolving seasons of the last half-century have witnessed a constant and growing tendency towards higher, nobler and better things.

A SYMPOSIUM ON PNEUMONIA.

THE ETIOLOGIC FACTOR.*

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Our time is too short to but touch upon the equally important factors that precede the invasion of the lung by the specific microorganism. In the few minutes alloted to the consideration of the etiology of pneumonia, I shall take up chiefly the etiologic relations of microorganisms to the disease.

Lobar Pneumonia.—The recent definition of lobar pneumonia by Doctor A. H. Smith will best introduce our subject: "Lobar pneumonia is an acute disease in which a specific parasite invades the air cells of one or more pulmonary lobes, wherein it grows in a fibrinous medium exuded from the functional capillaries, and generates a toxin that infects the system at large." The specific parasite of lobar pneumonia is the pneumococcus of Fraenkel and Weichselbaum. Pearce, in one hundred and twenty-one cases demonstrated ninety-seven and five-tenths per cent. to be due to the pneumococcus. According to Smith this organism is found in the expectorated material in all but a very small percentage of cases examined for it. When apparently absent it is probable that faulty methods of search have been employed or that some special circumstance has masked its development. Various pathologists, however, have demonstrated in exceptional cases of typical lobar pneumonia other microorganisms, as the bacillus of Friedlander, streptococcus and staphylococcus pyogenes, the typhoid bacillus, the diphtheria bacillus, and the influenza bacillus. While not as yet positively demonstrated, the most recent research tends to show that the pneumococcus is the essential etiologic factor of primary croupous pneumonia, and that the other organisms occasionally found are associated germs.

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* Read before the Detroit Medical and Library Association.

While the pneumococcus is the principal etiologic factor of croupous pneumonia, and without it there can be no croupous pneumonia, the normal individual in perfect health enjoys immunity against the pneumonia producing organisms, which like the tubercle bacillus and all other pathogenic germs are ubiquitous. In the changed condition of cell nutrition and activity which attend slight defection from the physiologic state, as well as the more serious ones that are dependent upon the presence of well-defined disease, immunity is diminished, germs invade the pulmonary air vesicles and become the inciting factors of pneumonia. The pneumococcus has been repeatedly demonstrated in the upper respiratory tract of many persons in perfect health, and it may be found in the blood, and further, it may be the pyogenic agent in meningitis, pleuritis, conjunctivitis, and yet the lung escape. It must, therefore, be assumed that in any given case there is a condition present that favors either the migration of the germ into the lung, or its development when there, or both. As to the close association of pneumonia with exposure to cold, there can be no question. How it is that such exposure brings about a specific disease of the lung we do not really know. Temporary arrest of the cutaneous function with the retention of excrementitious matter in the blood seeking elimination through the lungs, may determine a local irritation favorable to the development of the germ, or the congestion of the pulmonary capillaries that follows the effect of cold upon the skin may favor the irritation of the pathologic process. The arrest of bronchial secretion that attends pulmonary engorgement impairs ciliary action and deprives the deeper portions of the lung of protection from microbic invasion.

The immediate source of infection of the lungs is usually the upper respiratory tract and the mouth. In these cavities are found all the forms of microorganism that may cause pneumonia, some of them constantly, others only at certain times. During an attack of any one of the acute infectious diseases pneumonia is particularly apt to occur. The primary disease diminishes immunity and the pathologic nasal, oral and pharyngeal secretions constantly harbor abundant cultures of pathogenic organisms. This factor in the etiology of both lobar and bronchopneumonia is of the greatest practical importance in the management of the acute infections. Careful and systematic disinfection of the nose, throat and mouth from the beginning to the end of scarlatina, measles, typhoid fever and the other acute infections will prevent complicating pneumonias. Neglect of such care favors their development.

Communicability.—Pneumonia, being a disease directly the result of microbic invasion of the lung, is necessarily communicable. It is not, however, readily transmitted from person to person. Medical literature contains the details of many local epidemics of pneumonia, and numerous instances of the appearance of the disease simultaneously or in rapid succession in single households come under the observation of all physicians. The writer at the present time has under his care three children in the same family with acute lobar pneumonia. The second case developed one day after the first, and the third four days after the first. Given the predisposing etiologic factors, a person in intimate association with a person suffering from pneumonia may contract the disease.

BRONCHOPNEUMONIA.—Clinically, bronchopneumonia may be divided into primary bronchopneumonia and secondary bronchopneumonia. This type of the disease is essentially the pneumonia of infancy. When the pneumococcus invades the lungs of an infant it produces as a rule, not a lobar pneumonia as in the adult, but a bronchopneumonia, the different result being dependent upon the peculiar anatomical structure of the undeveloped lung of the infant. During the second and third years of life the pneumococcus may cause in one child a lobar pneumonia and in another a bronchopneumonia. In fact at this age not infrequently both varieties of pneumonia may be present in the same lung. Under the age of two years then most cases of primary pneumonia are of the bronchopneumonic type, and through childhood nearly all cases. The term bronchopneumonia describes a lesion rather than a disease, several quite different forms of infection being included under this head. Lobar pneumonia, as we have seen, is regularly associated with the presence of the pneumococcus, in most cases in pure cultures. In bronchopneumonia no one form of organism is always present. In primary bronchopneumonia the pneumococcus is the usual etiologic factor, in many cases in pure cultures. In secondary bronchopneumonia there is almost always mixed infection. The bronchopneumonia secondary to measles, diphtheria and other infection is usually due to the streptococcus, Loeffler's bacillus, staphylococcus, or Friedlander's bacillus. In fact, any combination of these different organisms may be found. The most frequent combination is the pneumococcus and the streptococcus, and in these mixed infections the streptococcus plays the most important part.

Doctor Samuel West best clears up the relations between the bronchopneumonias to one another and to their causes as follows:

(1) "That the primary and secondary bronchopneumonias have a different bacterial origin.

(2) "That secondary bronchopneumonia is for the most part due to streptococcus infection, derived from some source connected with the air-tubes, throat or mouth.

(3) "That primary bronchopneumonia is of pneumococcal origin.

(4) "That pneumococcal inflammation occurs with almost equal frequency in the child and in the adult.

(5) "That pneumococcal inflammation takes a different form in each, in the adult producing massive consolidation, and in the child patches of disseminated consolidation; in other words, that there is no real pathogenic distinction between lobar pneumonia in the adult and primary lobular or bronchopneumonia in the child."

West further says the term bronchopneumonia would be best reserved for those inflammations of the lungs which follow antecedent affections of the bronchi, and that their exciting cause for the most part will be found to be other organisms than the pneumonic, while on the other hand, the primary bronchopneumonias of children are really croupous pneumonias varying in a disseminated and patchy form instead of a massive consolidation.

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SYMPTOMATOLOGY AND DIAGNOSIS.

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In the time allotted, I shall attempt only a hurried review of the symptomatology of typical cases of the two great varieties of pneumonia, namely, croupous and bronchopneumonia.

A typical case of croupous pneumonia is ushered in with a chill, generally severe, soon to be followed by a *rapid rise of temperature*, usually to 103° or 105° Fahrenheit, which temperature remains quite constant until the sudden fall to normal or below of the crisis. This occurs usually from the eighth to the tenth day. In the aged and in drunkards the temperature may not be much elevated. The pulse which during the chill is small and rapid, soon becomes full and bounding, running from 100° to 120°. Later if there is much consolidation and the infection is severe, the pulse may become soft and small. The heart sounds are usually loud and clear. The second sound in the pulmonary area is accentuated. When the heart is failing the first and second sounds of the heart approach each other in character, somewhat simulating, as OSLER says, a fetal character.

Pain of a stabbing character in the side is an early symptom, usually first felt about the nipple area and sometimes under the shoulder blade. The cough is at first short, restrained, without expectoration and gives much pain. Soon the patient begins to raise a blood-tinged mucus, the tenacious "rusty sputum" so characteristic of the disease. This sputum contains leukocytes, mucus, corpuscles, red blood cells—many of them boken down, epithelia from various portions of the respiratory tract, Fraenkel's pneumococcus, Friedlander's bacillus, and in many cases the staphylococcus and streptococcus pyogenes. Later, as resolution begins, the sputum becomes more liquid. In low types of the disease the thinner, dark sputum resembling prune juice, is seen.

The respiratory symptoms are characteristic. The breathing is short and rapid, may be forty to sixty to the minute. Inspiration is short and shallow, and with expiration a short grunt is heard. Blood examination shows in nearly all cases a marked leukocytosis. The absence of this leukocytosis is said to make the prognosis much more grave.

Physical signs are as follows:

Inspection shows diminished expansion in the affected side. In contrast to pleurisy with effusion, the intercostal spaces are not obliterated.

On *palpating*, we feel the pleural rub. After there is consolidation, tactile fremitus is increased.

Percussion in the beginning shows no marked deviation from the normal, perhaps the note may be higher pitched over the engorged areas. With hepatization the note becomes flat and the consolidation can be easily traced by the extending dullness.

Auscultation.—At first with the restrained breathing we hear nothing unusual, but soon upon having the patient take a fuller breath, we hear the bronchovesicular breathing and at its close the fine crepitant rales. These to me always seem to come from the pleura. Later, except in cases of massive pneumonia when the bronchi are filled, the tubular breathing is heard. As resolution advances mucous rales of all varieties are heard.

Of *cutaneous symptoms*, the most common is labial herpes. The cheek of the side affected is often reddened.

Cerebral symptoms.—In children convulsions at the onset are common. Except in few cases and in alcoholic subjects the delirium is generally not marked.

The *diagnosis* is easily made from the symptoms, the sputa and the physical signs. Occasionally aspiration may be necessary to differentiate a pleurisy with effusion.

The careful man who is attending a patient suffering from some chronic affection will not often overlook an added pneumonia. In cases of central pneumonias the fluoroscope aids us greatly in early diagnosis and when an X-ray apparatus is available, such examination should be made of all suspected cases.

Acute tuberculopneumonic phthisis sometimes cannot be differentiated until the appearance of the tubercle bacillus and elastic tissue in the sputum.

In the typical case of *bronchopneumonia*, we see a child in the course of or during the convalescence from measles, whooping-cough, diphtheria, la grippe or other febrile affection gradually developing a cough. The temperature again rises, respiration becomes more rapid, and the pulse is quickened. Fine subcrepitant rales are heard especially at the bases of the lungs and sibilant rhonchi all over the lungs.

There is little dullness at first, but gradually areas of comparative dullness can be made out, and later larger areas of complete hepatization can be outlined.

The temperature ranges from 102° to 104° Fahrenheit. The course of the disease is more variable than croupous pneumonia, but in favorable cases, the temperature commences to decline at about the seventh to the tenth day and falls gradually.

Dyspnea, an early symptom, gradually develops respiration running very high. In severe cases there are some signs of cyanosis. As the cyanosis progresses the cough lessens, the child's anxious efforts to breathe are given up, the lungs gradually fill, and the child dies from a paralyzed right heart.

In the *primary form*, the child is taken suddenly with a chill or a convulsion, temperature rises suddenly and is more constant. The physical signs are more local. This form terminates often by crisis. The whole course is much more like cropous pneumonia, and since the sputum, if any, generally contains the pneumococcus, the differential diagnosis is at times impossible.

Ordinarily, in the secondary form, this differentiation is easily made by the mode of onset and the course of the disease.

No doubt many fatal cases of so-called bronchopneumonia are tubercular. Marked dullness over the apices of the lungs, or over the bronchial glands should make us suspicious. Sometimes in the vomited matter of young children and in the sputa of older persons, elastic tissue or tubercle bacilli can be made out which of course clears up any doubt there may have been about the case.

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THE MORBID ANATOMY.

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THE morbid anatomy of the several types of pneumonia has not been increased materially of late years, except from the point of view of its origin and the opinion now prevails very generally, that microorganisms must be considered as the exciting causes of the different forms of disease which bear this name.

Although the same bacteria are often found existing benignly in the respiratory and other organs of healthy individuals, the local or general vitality of the latter, being diminished at a certain time by the predisposing causes of the disease, permits the former to become pathogenic in their action.

The organism found most commonly in croupous pneumonia, is the diplococcus pneumoniæ, but in stating this fact, we must not forget that the same pathologic results have been found in certain cases to have arisen from the action of other bacteria, such as Friedländer's and Pfeiffer's bacilli, and even from strepto- and staphylococci.

That the peculiar form of inflammation which we find in this disease is not absolutely characteristic of the diplococcus is also evident from the fact, that its colonization in other tissues, such as the peritoneum or meninges, does not produce the same character of changes.

Some difference of opinion exists as to whether the bacilli reach the lung through the blood or by aspiration through the bronchial tubes, but I believe the majority of physicians favor the latter view. Having reached the region and found the suitable conditions for growth, their active proliferation commences and the irritation thus arising soon sets in motion the primary steps of the peculiar reaction which is to follow. Whilst they are thus multiplying, their excretions are also formed and are absorbed by their host and when the liver is no longer able to destroy the quantity of toxin in the circulating blood, we have the chill and fever or the general symptoms of the disease manifesting themselves.

We, therefore, have an infection to deal with and from this moment, we must think of the blood as containing an excess of the poison and that the latter in its course through the tissues injures them in a greater or less degree, according as they are more finely or coarsely differentiated. It is to this poison, then, much more than to the heightened temperature of the patient, that we must refer the cloudy and granular degeneration of cells, the molecular death of the tissues, which we find all through the body; to it, the slowed circulation and the faltering, stumbling heart rather than to the obstruction to the course of the blood caused by the consolidated lung and, as a corollary, it is to an antidote to this toxin that we must look for help to prevent these changes from taking place.

Which one of us who has practiced for a certain number of years, does not recall his astonishment in the times that are gone, in finding cardiac paresis promptly manifesting itself in some case of pneumonia in which the part inflamed was but egg-size in volume, whilst at the same time or shortly after, the same ominous symptom was quite absent in another patient with one or two pulmonary lobes consolidated? With the light of today, we can now read the lines of these cases in a satisfactory way. This antitoxin, however, is not yet available and I will leave any further consideration of treatment to the gentleman who is to consider that topic of our subject.

The gross anatomical changes of the lung in croupous pneumonia have been accurately described for years and I will not occupy the time of the Society in repeating them minutely, but will simply mention, as a stimulus to memory, that following the irritation of the bacilli, we find a stage of congestion or engorgement during which all the blood-vessels of the region affected are so distended with blood, that even those of the alveoli project from and occupy a portion of the lumen of the latter. The remainder of this space is occupied by air, the proliferated and cast-off cells of the alveoli and the thickened condition of those remaining adherent. The lung is dark-red in color, heavier than normal and when dropped in water sinks below its surface, but not to the bottom of the vessel.

This condition gradually merges into the period of consolidation or red hepatization, during which the engorged vessels are pouring out a fibrinous fluid, white and red blood-cells and even pure blood into the interstices of the tissues, the air-spaces and the bronchioles. This exudate is rapidly absorbed at first by the lymphatics, but eventually the task becomes too great for them and the liquid being checked in its course solidifies, imprisoning the corpuscular elements in its fibres. The lobe is now of mahogany color and its cut surface, from its resemblance to the liver, readily suggests the name of red hepatization. The tissue is now still heavier than before and rapidly falls in water to the lowest point possible. It is airless and cannot now be insufflated as in the first phase of the disease.

During the third period, gray hepatization, so-called, and resolution, the lung loses its dark-brown appearance to become reddish-gray, from the massing of the phagocytes in the region inflamed, fatty degeneration of some of the new cells and the granular change of the fibrin fibres. Accompanying these changes is an increased amount of fluid in the parts which helps to accelerate them and soften the occluding mass, permitting its absorption, and expectoration and allowing air again to enter the alveoli. If the crisis of the disease occurs very early, the third or fifth day, much of the exudate is expectorated, as the fibrin-plugs of the lymphatic vessels do not degenerate until the seventh or eighth day, and thus its absorption cannot take place. On the other hand, when crisis occurs late, it is sometimes remarkable how little is raised, as the lymphatics dispose of far the larger portion of the croupous formation.

During the course of this third stage, we occasionally witness one of nature's mistakes in reacting to a greater degree than the occasion demands. We are all familiar with such examples elsewhere, as when a bone becomes eburnated or ivory-like from the continued thickening of the bony lamella as the result of a primary slight injury; so in the case of the attacked lung, nature marshals her host of white cells to overcome the invading bacilli. Millions of them are killed by the poisonous liquids of the region and by the bacteria themselves, but fresh ones are ever pushing forward, until they crowd themselves so badly that nutrition can no longer be brought forward to them. They likewise die and the fatty transformation of these myriad cells imparts a greenish yellow cast to the region and yellow hepatization is said then to exist.

This series of events is not necessarily generalized and therefore in the midst of the gray hepatization we may see limited regions presenting this appearance, whilst in other instances no gray hepatization is visible as the entire lobe has undergone the change. If the purulent infiltration or crowding of the leukocytes has been sufficiently intense to greatly check or arrest the blood-circulation in the trabeculæ of the lung, we may have a number of small abscesses formed; or, by the disintegration of the tissues between the latter, one or more large ones result, which either burst into the pleura causing empyema or into a bronchus inducing expectoration, or an interstitial inflammation results at the periphery and by the formation of a new fibrous tissue, they become encapsulated.

Bronchopneumonia likewise always owes its origin to the action of microorganisms and should now, like the croupous variety, be classed among the infectious diseases. Their action is first exercised upon the mucous membrane of the bronchial tree, giving rise to a catarrhal inflammation, which by continuity extends down into the finer bronchioles, producing there the first changes that interest us.

We now find on examination that the inflammation has passed through the bronchial wall, invading the connective tissue for several millimeters' distance, thus adding a peribronchitis to the original disease.

A section lengthwise of such a bronchiole shows this fact by the presence of a gray zone alongside of the wall, which projects above the surface of the lung, as may be felt by passing the finger over it. In some of the pulmonary lobules, the catarrhal inflammation of the bronchioles undoubtedly extends down and soon their alveoli are filled with its products and the proliferation of their own cells, thus rendering those portions of the lungs incapable of performing their functions. Close inspection of these deeper parts proves that the peribronchial inflammation has extended as well as the intrabronchial and that the gray zone previously mentioned now surrounds the lobule also for an equal distance.

Alongside of these parts we may have other abnormal areas in which the course of events in no way resembles that of the former. It is true that the primary bronchitis is a necessary factor in the explanation of these, but the resemblance here ceases. This bronchitis, by its products, can block a tube to such an extent that air can pass out of its terminal lobule in the forced breathing of the patient, but inspiration sucks the purulent mass, like a ball-valve, into the smaller space, so that it acts like a plug, thus forbidding all access of air to its alveoli. In this way the lobule is pumped out and on account of the vacuum thus produced the tissues of the part collapse upon themselves and would be compressed more and more by the surrounding regions were it not that that more mobile tissue, the blood, finding this zone of. diminished resistance, rushes into its vessels, distending them to their utmost capacity, and with the slowing of the current, possible diapedesis of the white blood-cells and some proliferation of those of the part set in.

This results in the so-called splenization or carnification of those portions of the lungs. If we now recall the fact that these two forms of changes cut off a great amount of the respiratory surface and that in consequence the patient is obliged to breathe more forcibly and frequently than in health, we would naturally infer that acute emphysema of other parts must result and in fact, we find that this third lesion exists along with the two others. Depending now upon the individuality of the case, we may have all conceivable combinations of these three processes existing in the affected lungs, and therefore, when we open such chests, we may find very different external appearances of these organs presenting themselves.

Remembering, however, the pathologic problems which we have just discussed, we now recognize that the gray zones which we see, are composed of aggregations of those lobules which the catarrhal inflammation has invaded; that the bluish-red or purplish depressed regions are those in which collapse has taken place; that the very prominent ones, in which the enlarged air-cells can be recognized microscopically are the sites of emphysema, whilst the remainder, though heightened in color, is the nearest to the normal condition.

In conclusion I will say as I have before expressed myself to you, that the changes in the lungs originating from the presence of Pfeiffer's bacillus in them, are of the most varied character and consist in lesions resembling those already described and in others which are more purely congestive or more or less paralytic. Thus, in some cases, atelectasis or rapid collapse of different parts of the lungs is the prominent feature and the patient dies from asphyxia through being so suddenly deprived of so much respiratory tissue; in others, the symptoms of active congestion predominate and the patient drowns in the pulmonary edema; in others paresis of the bronchi governs the scene and the individual is lost through his inability to expectorate the products of inflammation; and finally in other fatal cases the processes do not differ from the croupous and catharral types except in fact that they are progressive and in the end occupy so much territory that life is incompatible with the small remainder. Undoubtedly, the toxin of Pfeiffer's bacillus or the influenzal virus affects in the gravest way, those who are tired, depressed and exhausted from any cause and it is particularly in such patients that we meet with these irregular or atypical conditions of the lungs.

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THE TREATMENT.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

As is well known there are at least three types of acute pneumonia recognized, namely: Lobar, or croupous pneumonia, broncho- or catarrhal pneumonia, secondary pneumonia.

It is, of course, likewise well understood that no routine treatment can be laid down for the varying conditions and degrees of infection under any one of these classifications. The adoption of any plan will depend upon the previous history of the individual, the extent of the poisoning or sepsis accompanying the disease, the regularity or irregularity of the course, and the complications which may arise—especially concerning the heart.

In the case of lobar pneumonia of the ordinary type the therapeutic indications are to limit, if possible, the amount of primary infection or local disease and at the same time judiciously guide the system through the resulting reactions of the attack. In the majority of cases the pyrexia may be considered a healthy insignia of reaction, but it is easy to see that this phenomena may run wild, so to speak, and if so, it is the duty of the physician to regulate it if possible. For this purpose several plans and many agents suggest themselves, such as the administration of aconite, pilocarpin, veratrum viride, the coal-tar products, calomel, tartar emetic, apomorphia, the various saline medicaments, and the application of ice or cold water. As a rule it will be found that the application of ice or cold water will answer the purpose best. While certainly lowering the temperature it does so without embarrassing in any way the vasomotor nervous system, an untoward effect which is likely to follow the administration of the coal-tar products, aconite, tartar emetic or other depressants. As the stage of congestion ranges from twelve hours to three or more days it is obvious that this is the favorable time for the application of ice. Should symptoms of depression or unusual cold arise during its use it should be discontinued immediately. Care should also be taken that it is not applied to the thorax until the initial chills which usher in the disease are well passed. During the early stages if there be much pain or restlessness which is not relieved by the cold applications, opium or hydrate of chloral should be given. Sulfonal and trional may also be used, but according to my observation either opium or chloral is far the better anodyne or analgesic to administer early in the disease, the latter (chloral) being preferable so long as the temperature is elevated. If, however, sudden defervescence is about to take place or has taken place, *chloral*, as indeed all other anodyne preparations, should be at once withheld.

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* Read before the Detroit Medical and Library Association.

In the milder cases in which the range of temperature is between 99° and 101° Fahrenheit, applications of ice do not seem to be necessary, but instead small doses of aconite frequently repeated, or sometimes if the cough be harassing, small doses of tartar emetic frequently repeated will ensure prompt relief. In cases of unusually high temperature during the congestive and even the first part of the exudative stage, the ice applications should be continued, but as a rule not much will be gained by the continued applications of ice to the thorax after the exudative stage has become established. It is, of course, well known that the stage of red hepatization may be rather irregular even in ordinary cases. If this be the feature in a given case, the continuance of the ice or the other remedies mentioned will become a matter of individual judgment. I have found, however, in such instances that either aconite or tartar emetic is preferable. The coal-tar products which are so commonly used nowadays should, if at all, be very cautiously administered in these cases. I will state in passing, however, that in the stage of red hepatization undergoing its regular course, if the hyperpyrexia is marked without great remission and there be no endocarditis, pericarditis, or chronic cardiac affection with the pulse tension and rhythm good, one or two doses of phenacetin may with safety be administered. It will often be just the thing for the moment, yet I do feel that the administration of the depressant coal-tar products in this disease is never altogether free from dangerous consequences.

Of course, it is understood that the three greatest dangers accompanying this disease is the overwhelming sepsis, the so-called heart failure (which cannot always be well accounted for), and the development of such complications as pericarditis, meningitis, pleuritis, nephritis, et cetera. It is, therefore, plain, that, after the third day, the practitioner must be on the lookout for complications of this kind. Excepting in very mild cases the heart's action is an object of great solicitude. Oftentimes the practitioner has plenty of warning by the gradual advent of feebleness or irregularity of stroke of the pulse, but at other times, as we can all bear witness, the terrible change from a good to a feeble and irregular pulse may occur within a few hours. There is perhaps no acute disease in which the administration of stimulants can be judiciously commenced earlier on this account. At the same time it is unwise even in pneumonia to administer alcohol, digitalis or strychnia too early in the disease for fear of exhausting that vital irritability of the nervous system upon which the life of the patient may subsequently depend. It is difficult to lay down a rule for beginning the administration of stimulants for that is too largely a matter of judgment. It may be said, however, that after the third to the fifth day it will be safer to begin the administration of alcohol at least, with the idea of gradually or rapidly increasing the dosage as the signs and symptoms may indicate. During the latter part of the stage of red hepatization and during the stage of gray hepatization stimulants and tonics, among which may be ranked alcohol, quinin and strychnia as the best, can be with safety administered quite regularly. Besides these, salol given every three or four hours will be found one of the most useful remedial agents.

In cases of somewhat irregular course wherein the period of resorption or resolution instead of lasting seven to ten days runs a period of twenty to thirty days, these agents should be diligently administered for the support of the animal powers and the control of the sepsis. It is during the third stage of the disease that carbonate of ammonia, strychnia and digitalis with or without quinin are most valuable. I am aware that some practitioners use carbonate of ammonia from the beginning with good effect, but according to my experience it has never amounted to much as a therapeutic agent until after the seventh or eighth day of the disease in ordinary cases. The iodide of ammonia is also valuable during this period, in small doses frequently repeated, such as two or three grains every two hours. It is especially useful if there be a limited amount of bronchitis accompanying the disease. It may ordinarily, however, be stopped after a period of a few days to a week, the indications for this being profuse expectoration with irritation of the upper air-passage. I regard this as a far more valuable agent than iodide of potassium or iodide of sodium in the latter stages of the disease.

In all of these cases, at the beginning it is well to administer a cathartic, either calomel or some saline such as sulphate of magnesia. I much prefer the former agent given in one or two full doses. This not only clears the intestines of all feces, but seems also to have a good selective action on the glands and lymph vessels, apparatus which we know must do extraordinary work in the later stages of the disease. Any sign of heart failure should be met promptly by the administration of digitalis, strychnia, nitroglycerin or nitrite of soda, either by the mouth or hypodermically. The strychnia should be administered in alternation with the digitalis in course rather than with it, and the nitroglycerin at times as needed. It is especially indicated if the symptoms during the latter stages point to new foci of infection or if venous turgescence is manifested by disproportionate frequency of respiration. Here, too, the inhalation of oxygen may prove valuable.

In the so-called infectious form of pneumonia, the form which frequently accompanies influenza or la grippe, we must deal with an irregular and virulent disease from the outset. It is almost impossible to anticipate, as we can do in the course of the ordinary type, the conditions from day to day. I have witnesssed, and I suppose all of you have, the involvement of nearly the whole of one lung with possibly one or two patches of the opposite lung within twenty-four hours after the third or fourth day. We also meet with these atypical cases in which the physical signs bear no indication to the amount of the sepsis presented. It is almost unnecessary for me to suggest that in these irregular atypical cases the therapeutic management becomes extremely difficult. Beside absolute quiet and the judicious use of alcoholic stimulants, I believe that these cases are very much benefitted by the steady administration of infusion of digitalis with acetate of potash and the hypodermic administration of antistreptococcus serum. It is clear that we must not only do something to prevent paresis of the vasomotor nerves of the lung but we must provide some extraordinary means of removing the consequences of the poison, and in the majority of cases we shall find ourselves able to put this extraordinary work upon the kidneys, which can be done with impunity by the use of the combination that I have mentioned. In these cases, too, the judicious use of nitroglycerin and caffein must not be lost sight of. Undoubtedly these agents are capable of assisting nature to bridge over many epochs in the course of the disease which might otherwise prove fatal. I deem it therefore necessary for the practitioner in all such cases to authorize the nurse to make use of such agents as strychnia and nitroglycerin whenever symptoms of collapse or heart failure become apparent. Embarrassed respiration or great disturbance of cardiac rhythm are also important signals.

Bronchopneumonia which cannot be said to be atypical in a large percentage of cases will require as a rule the judicious administration of expectorants almost from the beginning. Tartar emetic, apomorphia, carbonate and iodide of ammonia with some form of opium will be clearly indicated in the majority of cases. The outward application of turpentine is also one of the best adjuncts in this form of the disease. If the patient be very old, of course it goes without saying that alcoholic stimulants should be administered early. If the patient has been addicted to the use of alcohol in large quantities, the practitioner must be on the lookout for delirium tremens or meningitis. This is not only true of the form of the disease under consideration, but it is equally applicable to cases of lobar or secondary pneumonia occurring in such individuals. Large doses of chloral in such instances, providing there be an elevation of temperature, either alone or with bromide of potash will prove excellent remedies. The ice-pack to the head of course should be applied in all cases wherein brain complications of any kind are either suspected or actually present. I have found that the continuous administration of calabar bean in cases of meningitis, or in cases of active delirium accompanying any of these forms of pneumonia is an excellent remedy. In one case of a youth sixteen years of age, certainly threatened if not suffering from acute meningitis, I obtained excellent results from repeated hypodermic injections of atropia. In these cases also if we may be allowed to adopt any routine treatment I think a few doses of calomel administered so as not to produce ptyalism will prove an excellent remedy. Quinin may also be administered alone or in combination with the white alkaloid of hydrastin with good effect. If the pyrexia be persistent, the continued administration of salol is indicated, together with a few large doses of quinin or better cinchonidia.

The food in all of these cases of acute pneumonia should be carefully regulated. From my experience I have found little good in the administration of any solid food until defervescence has taken place. However, there are cases which will prove exceptions to the rule. Liquid diet, of which we have a great variety to choose from, is the plan of feeding which in almost all instances should be adopted. It is almost unnecessary for me to add that in all of these cases of severe illness, especially when we know there is danger of interruption of the cardiac function from the poison generated and from the overwork of the organ, all quick movements or sitting up or standing up of the patient should not be allowed under any circumstances whatever. The free administration of distilled water is a valuable addition to other medication, especially during the late stage.

Cases of secondary pneumonia arise oftentimes as the result of injuries not only in the neighborhood of the respiratory passages but elsewhere in the body. They frequently arise as we know as a result of a long continued endocarditis or pericarditis or even a pleuritis. These cases are to be treated on the rational principles which will suggest themselves to every practitioner. For instance, if the disease be somewhat limited, and the pulse good and full in a given case of injury, no hesitation need be felt in administering one of the coal-tar products or tartar emetic or several large doses of calomel to limit the amount of congestion and hepatization. The ice-bag may also be an appropriate remedy in these cases, but it will be found that unless the temperature be at 104° Fahrenheit or thereabouts its effects will be disappointing. This can only be accounted for upon the hypothesis that the nervous system having been laboring for some time under shock or irritation from the accompanying disease does not allow the vasomotor system to respond with alacrity to the effects of the cold. Indeed I have found in these cases that the local application of hot poultices or fomentations, or even the application of a series of small blisters will have a far better immediate effect. It must be remembered that endocarditis or even pericarditis may occur without manifesting any marked symptoms excepting perhaps an increase of respiration, so that it seems to me that in all of these cases the practitioner should be on the lookout for such a complication. If there be such it is almost unnecessary to say that the cardiac stimulants must be withheld at least for a considerable time. I have found in such cases that when there were no neurotic contraindications, a steam bath given to the patient while in bed, and the more or less continuous excitation of the skin to bring about diaphoresis is a most valuable plan of treatment. For states of exhaustion hypodermic injection of the normal saline solution is beneficial.

Of course, in the short time alloted to me it has been impossible to deal in extenso with these several remedial agents and their proper arrangement to meet the therapeutic indications. Neither do I think such a course necessary in presenting the subject to a body of physicians like this. I will therefore omit all allusions to the treatment of the atypical forms and also the sequences of the acute forms of pneumonia.

FULL-TERM ECTOPIC PREGNANCY, WITH REPORTS OF TWO CASES*.

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

ECTOPIC pregnancy is said to occur about once in five hundred pregnancies. In my own experience, however, it has been much more frequent. I cannot say how often the fetus runs the gauntlet of spontaneous death, the surgeon, and the death of the mother, to full term. This occasionally does occur, however, but at the present time is a comparatively rare condition, usually the result of a mistaken diagnosis. Practically all cases have symptoms which bring them under the care of a physician before the end of the third month; symptoms indeed, that lead to a diagnosis of the condition present; and once diagnosed it is the universal opinion, that unless the case presents some unusual features, the fetus should be removed without unnecessary delay, regardless of its condition or of the stage of pregnancy. Should the fetus have reached a viable age it certainly adds to the grandeur of the operation to save both mother and child. The child is, as a rule, poorly developed and almost always presents some deformity, and it is the rare exception for it to grow to maturity. So poor are its chances that it is considered an improper procedure to increase the dangers of the mother by delay, for the purpose of saving the child. Just how dangerous the delay of a few days may be in any given case can never be estimated, for rupture is liable to occur at any time and death rapidly follow. I can recall at least four cases in my own experience in which death has so occurred after a diagnosis had been made, but operation refused or delayed for a short time.

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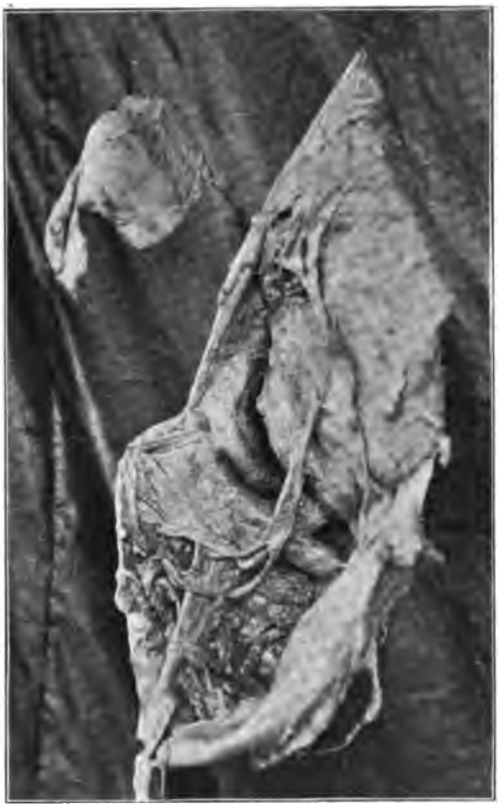
* Read before the WASHTENAW COUNTY (Ann Arbor) MEDICAL SOCIETY.

It has been my priviledge to operate upon three cases of full-term ectopic pregnancy, and to assist in one other. The fetuses were all dead at the time of operation. A correct diagnosis had been made in but one instance when the cases came under my observation. This one, I think it worthy of note, had been made by a former member of our clinical staff who had graduated but a few months before the case came under his observation; and, while he was laughed at and ridiculed by the older physicians present at the consultation, he persisted in his opinion which proved to be a correct one. Two of the other cases were supposed to be missed labor and were referred to me for delivery. The one in which I assisted DOCTOR MARTIN was thought to be a fibroid tumor until it was removed. The two cases which I shall report tonight have a remarkably strong resemblance, both in history and conditions found at the time of examination and operation.

CASE I.—Three weeks ago last Thursday I operated upon MRS. J. B., of New York State, referred to me for delivery, having gone over her time. She gave the following history: Age twenty-two years; married two years; reached puberty at fourteen years. Periods always irregular, at times several months elapsing without any showing, which was always small in amount, lasting three days and invariably painful. With the exception of this disturbance of her periods, she considered herself in good health until last December. Her dysmenorrhea was said to be due to anteflexion and stenosis of the cervical canal. She had taken local treatment for the purpose of overcoming these conditions two or three times a week, from October, 1899, to May, 1900. November 15 she menstruated for the last time. Her physician continued the treatment, however, until May, giving her chloroform and dilating the cervix three times a week.

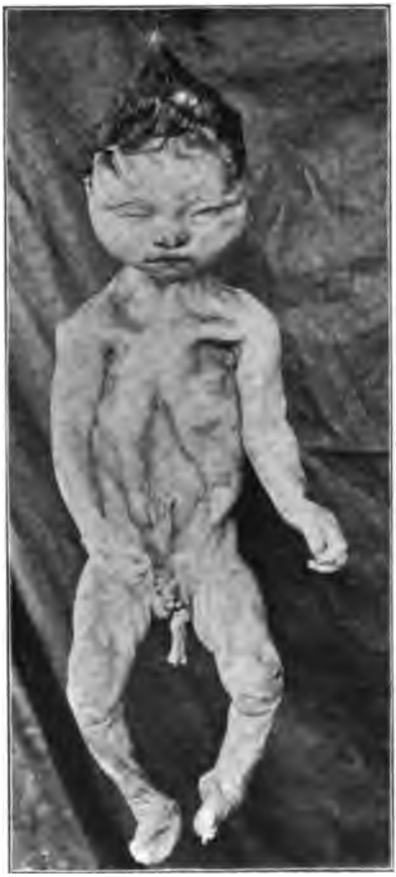
On February 13, she was taken with severe pain and faint feeling. She was in bed two weeks, having intense pain and tenderness in the lower part of the abdomen. Nausea ensued; her breasts enlarged; and in April she felt fetal movements which continued until August 1. July 28 she had severe pains in the abdomen like labor pains and later a hard chill. Her physician thought labor was coming on, but it did not, and in a few days she felt quite well again. After that she felt no fetal movements and the abdomen became considerably smaller. In September she had a bloody discharge lasting three weeks which was very much like menstruation with the exception of its duration. After this she suffered from nausea; had a very poor appetite; was weak and sick. Her temperature rose to 100° and her pulse became 110. The tongue was heavily coated and the bowels were loose.

Examination of the abdomen showed an enlargement extending three inches above the umbilicus, hard, very slightly if at all movable and flat on percussion. No fetal parts could be felt. Vaginal examination revealed a hard smooth mass filling the pelvic cavity. Sutures and a fontanel could be felt through the vaginal vault. The cervix could not be felt with any certainty, but a small nodule high up under the pubic arch migh have been it. The question of ectopic pregnancy or atresia of the cervical canal was an open one. A small hard enlargement to the left of the median line above the pubic arch and closely attached to the tumor if not part of it might have been the undeveloped uterus, but an attempt to pass an instrument failed. The patient being tired and sensitive further examination was postponed for two days. At the second examination I succeeded with great difficulty in passing a sound two inches into this enlargement which satisfied me that it was the undeveloped uterus.



Uterus, left tube and ovary. Uterine cavity torn open in separating sack. Fetal sack and membranes torn open to show part of interior.

I made a diagnosis of extrauterine pregnancy with dead child and advised an operation to which the patient readily gave her consent. My first impulse was to open through the vault, apply forceps and deliver through the vagina leaving the placenta and sack to be cared for by time and Providence. I, however, remembered a similar case in which I had depended upon these agencies, together with a country physician, and decided to adopt other measures. On that occasion the physician thought he would, on the second day, complete my unfinished work, and, directly contrary to my instructions, removed the packing, and attempted to remove the placenta. The patient already weak and exsanguinated bled until she fainted and it was thought she was dead. The physician succeeded in repacking the wound and in stopping the flow of the few drops of blood that remained in her body, and Providence being kind she was stimulated back to life. The physician absolutely refused to have anything more to do with removing packing or placenta after that. Although the patient ultimately recovered she had a long, tedious convalescence, and narrowly escaped death from sepsis. The low head, the thin septum, and the uncertainty of being able to remove the sack from above seemed inducements to proceed from below, but the small undilatable vagina; the chances of tearing through the bowels, bladder or other important structures; and the possibility of being able to remove the entire sack and placenta from above, made me decide upon the abdominal route. Consequently on October 11, I made an abdominal section and found the sack adherent to the omentum, the intestines, the posterior wall of the abdomen and the pelvis over its entire surface, with the exception of the anterior wall, which came in contact with the lower part of the abdominal wall and the bladder. I incised the sack and removed the fetus which weighed six pounds and one ounce—unusually large for extrauterine development. It had evidently been dead for some time as its epidermis had nearly all peeled off and a large amount of its hair came out. There was a large amount of dark colored, decomposing amniotic fluid present. After thoroughly washing out and disinfecting the sack and wound, I began separating the adhesions. It was a difficult and tedious procedure, but I finally succeeded in removing the entire sack. In doing so I dissected up the right ureter four or five inches, laid bare the large vessels and tore into the cavity of the uterus through its posterior surface which formed a portion of the sack. This necessitated the removal of the uterus and the left tube and ovary, the pregnancy being a right-sided one. After ligating all bleeding points, I packed the lower portion of the cavity wherein there was slight oozing which I drained with tube and gauze through the vagina, and then closed the abdominal wound.



Fetus removed from Mrs. J. B., showing club-feet and large hydrocephalic head.

The patient was put to bed a few minutes less than one hour after beginning the operation, and has not had a single bad symptom since. A reaction temperature of 1.5° followed for a few days after which it declined to normal and has remained so since. The patient is now about the house and feels stronger and better in every way than before the operation.

The child although unusually well developed for extrauterine gestation was deformed in its extremities, and the softened condition of its head and the wide sutures strongly indicated hydrocephalus. The sack was adherent over almost its entire surface. There was no well-formed placenta but enormous vessels coursed over its surface. I attempted to inject these, but they were so tender that they ruptured.

Case II.—Mrs. G., aged twenty-three years, married five years, and having one child two and one-half years old, came under my care September 24, 1899. She considered herself well until shortly before I saw her. Her last period was in December, 1898. In February she had a severe attack of pain and faint feeling, was confined to bed and suffered from inflammation in lower part of the abdomen for two weeks. Patient first noticed enlargement in March or April, which progressively increased until two weeks before coming under my care. At that time she had severe pain and thought she was about to be confined. Labor not coming on a consultation, at which several physicians were present, was held, but they failed to agree regarding her condition. The uterus was explored under an anesthetic, but it was said to be empty. She had been decreasing in size for two weeks previous. Her temperature was 100.5° while her pulse ranged from 110 to 120.

Examination showed the abdomen enlarged and dull, the enlargement extending three inches above the umbilicus. It was fixed and very sensitive. Examination per vaginam showed the cervix, which was crowded up under the pubic arch, enlarged and patulous. I could pass a finger through the cervical canal, the dilatation no doubt being due to the exploration a few days previous. The uterus measured three inches, and was slightly movable. A hard round mass filled the pelvis on which a suture and fontanel could be felt through the thin vaginal vault.

The diagnosis of ectopic pregnancy with dead child was easily made in this case, and the patient readily consented to an operation. I chose the abdominal route for the same reasons I mentioned when speaking of the first case. On September 26 I opened the abdomen and attempted to separate the adhesions, but finding them very firm, proceeded exactly as in the preceding case, dissecting out the sack after emptying and disinfecting it. In this case, however, there was a small portion of the sack deep down in the pelvis which I was unable to remove. This I drained into the vagina and closed the abdomen. The uterus, left ovary, and tube were left intact.

Patient's recovery was as satisfactory as could be desired. She returned to her home five weeks after the operation and has since been enjoying good health.

THE ANTISEPTIC AND ANTIPYRETIC TREATMENT OF TYPHOID FEVER.*

BY FRED GROVER, M. D., FRASER, MICHIGAN.

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TYPHOID FEVER is an infectious disease characterized by distinct lesions in Peyer's patches, the mesenteric glands, and the spleen, which are manifested clinically by fever, headache, enlargement of the liver and the spleen, and often by constipation followed by diarrhea.

The predominant symptoms are gradual weakness, headache, pains in the back and the legs, nosebleed, et cetera. The respiratory symptoms are a hurried respiration, slight cough, and bronchial rales. A panting respiration regardless of the height of the temperature usually requires from eighteen to twenty days. The face has a dull expression, the cheeks are flushed, the conjunctiva is clear, the pupils are dilated, and the tongue is tremulous and coated white posteriorly, later becoming glazed and red. With the treatment to be recommended it never becomes dry and brown. The abdomen is generally distended with gas. Tenderness in the right iliac fossa is common. Gurgling and diarrhea are not common at first. In some cases, after a few days, by pressing with finger tips over the right iliac fossa, the sensation of breaking fine ice crystals on a frosty windowpane is experienced. This sensation I have never felt in any other disease.

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* Read before the DETROIT MEDICAL AND LIBRARY ASSOCIATION

The temperature rises quite rapidly, reaching its highest point—if properly treated—in four or five days. The fever has a morning remission and evening exacerbation. The duration of the fever under the treatment in vogue is from three to eight weeks—with antiseptic and antipyretic treatment from ten to twenty days. This statement is based on a record of the treatment of forty-four cases with three relapses. Eight of these patients had been using water from the same well. The average duration of the fever in five of these patients that I treated from the beginning was seventeen days, while in the other three it was thirty-eight days. Of these three I saw the first case October 7, the second October 14, and both were progressing favorably on October 18, when I was taken ill and they passed into the hands of another physician. November 10, having resumed practice, I was again sent for and found the first patient much emaciated, with a temperature of 102°, the heart's action very weak, a cough, et cetera. The second case presented the usual symptoms of typhoid in the fifth week with a temperature of 104°. A third case I now saw for the first time. The patient had been sick since October 20, and was suffering from a thrombus of the left leg. His temperature was 103½° and his condition serious. In the first case the temperature became normal in five days, in the second in ten days and in the third not for fifteen days, but I think the thrombus kept up the temperature in this case for about seven days. Another patient contracted typhoid fever while caring for a sister ill with the same disease and who was treated by another physician. The duration of the fever in her case was about forty days. The brother had the higher temperature of the two, but I used the treatment to be recommended and his temperature became normal on the nineteenth day. Lest some of the audience say these were not typical cases, I would state that the sister was a servant in a family in which the husband died of typhoid fever and she was taken ill with the disease shortly after his death. Again, three other patients using water from the same well were seen by three other physicians who confirmed the diagnosis of typhoid fever.

One thing to which I would call your special attention is the rapidity with which the fever leaves the patient. There will be no change in some cases until about the seventeenth or eighteenth day, when the fever chart will show a marked morning remission and in less than three days the temperature will be normal. This can sometimes be predicted by the pulse becoming full and soft twenty-four hours before the thermometer shows any particular change.

The treatment is both antiseptic and antipyretic. The antiseptics employed are prepared in the form of pills and soft capsules. These pills are similar to but not identical in composition with Woodbridge tablets number one, from the use of which I did not derive as good results owing to them producing nausea and being so volatile. In severe cases give the pill day and night every fifteen or twenty minutes for about three days. Place it in the patient's mouth and he will swallow automatically without becoming thoroughly awakened. If the bowels do not move four or five times each day, I give a tablespoonful of castor oil in hot milk. The stools at first are dark, then green, later becoming yellow. In a case in which vomiting occurs, it is generally relieved when the bowels move freely. When severe vomiting occurs in alcoholics, the prognosis is grave. After giving the pill for about three days alternate with the soft capsule, giving one every four to six hours for thirty-six hours, and thus avoid ptyalism. Give the pill continuously if possible, only using the soft capsule as a safeguard. In severe cases apply to the abdomen an ointment composed of one drachm of carbonate of guaiacol and three drachms of adeps, using the whole amount in twenty-four hours. Give the oil of eucalyptus freely. I administered three ounces in ten days in a case in which the temperature was 106½° Fahrenheit, and the outlook was very gloomy, owing to a severe hemorrhage as well as a high temperature. Indeed it did not seem possible for the patient to live through the night. On the twentieth day his temperature was normal, and remained so; although he had eight hemorrhages within the next few days. Recovery was complete. In a case of hemorrhage give the soft capsule for two or three days and use other remedies as indicated —ergot, morphin, or turpentine; A severe hemorrhage is not always followed by a high temperature.

FORMULA FOR THE PILL.

℞	Podophylini	gr. 1-960.
	Sodii Chloridi	gr. 1-16.
	Guaiacol Carbonatis	gr. 1-16.
	Menthol	gr. 1-16.
	Thymol	gr. 1-30.
	Olei Eucalypti	q. s.

FORMULA FOR THE SOFT CAPSULE.

℞	Guaiacol Carbonatis	gr. iij.
	Thymol	gr. j.
	Menthol	gr. ss.
	Olei Eucalypti	M. v.

A man, aged forty years, had a temperature ranging from 103° to 103½°. On the fifteenth day of the fever he had a hemorrhage and lost about four quarts of blood. On the sixteenth day his temperature was normal; on the seventeenth day it registered 100°; on the eighteenth it returned to normal, where it remained. He made a complete recovery. Afterwards his wife and two daughters also contracted the disease — the wife's fever continuing twenty-one days, the daughters', fifteen and sixteen days respectively.

If nephritis should occur as a complication, I do not alter the main treatment. I once had a patient with typhoid fever accompanied by nephritis, in whom the urine contained fifty per cent. albumen. Pursuing my usual treatment her temperature became normal on the nineteenth day and she made a complete recovery.

Control a high temperature with acetanilid. I give four grains every hour uutil the temperature is partly reduced, for example: reduce a temperature of 104° to 102°, never lower; then take the temperature every two hours and when it rises above 103°, again reduce it about two degrees. In this way the temperature can easily and safely be kept so that the patient has no subsultus or delirium. The height and persistence of the temperature is a measure of the severity of the attack. I give enough of the acetanilid to reduce the first high temperature. Later, I give only enough to produce the desired effect. Often late in the disease the temperature can be reduced from 103° to 100° by giving one or two grains with a little whiskey in hot water, thus changing a hot dry skin to a moist one, adding much to the patient's comfort, and, I believe, producing a safer condition.

Sponging the patient every four or five hours with vinegar or whiskey and water before giving the acetanilid—never after—also adds to his comfort. Phlebitis, should it occur, is to be treated in the usual way, the regular treatment of the fever being continued. Giving plenty of water relieves the smarting of the stomach, although this is generally borne patiently in expectation of an early recovery.

I would say in conclusion that I have never seen marked delirium in a patient treated by the foregoing method, and have derived great benefit from the conservative use of acetanilid. Only well-marked cases have been considered. In one case the temperature three times reached 107°, in three 106°, and in several 105° Fahrenheit. I have employed this treatment in the management of forty-four patients, three of whom relapsed and one died.

GOITRE AND ITS TREATMENT*.

By H. WELLINGTON YATES, M. D., Detroit Michigan.

[Published in The Physician and Surgeon exclusively]

I have no other purpose in the writing of this paper than to call attention to a few of the characteristics of this disease and lay emphasis upon the fact that all goitres should receive medical or surgical attention. It is not my intention to announce any new feature in diagnosis or treatment; neither do I claim any original thought along this line. I hope, however, to be able to generalize a treatment that will correspond to the condition as classified herein. I, of course, have no reference to Graves' disease, nor to other enlargements of the thyroid, only as they affect a differential diagnosis.

As yet, we do not know the true nature or function of this gland, and until the physiologist has demonstrated it, the pathology will be uncertain and the treatment quite empirical. Some believe that the active constituent of the secretion, whatever it may be, is constantly poured out into the blood current and through some effect upon the cells of the body by it, assimilation and waste are controlled. All agree that the gland has a most important influence upon metabolic change.

Simple goitre is found sporadically, endemically and epidemically; it has certain localities mapped out for an abiding place. One of these seems to be the Alps of Switzerland. Osler quotes Dock as saying that the disease is prevalent in certain parts of Michigan and New York, especially the eastern border of Lake Ontario. E. J. Meyer, of Buffalo, says it is endemic in Detroit. The disease, certainly, affords a good clinic here. Why should certain portions of the world see so much of it and others so little? Some observers believe it to be most prevalent in high altitudes. If this were true, why do not those who live up in the mountains have the disease more commonly than those in the foot-hills of the Alps, whereas the opposite is true. If this is looked upon as a cause, why, indeed, should we of Detroit or they of lower Canada be affected by it at all?

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* Read before the Detroit Medical Society.

Someone has called attention to the fact of streams of water being goitrous, and that persons drinking from them would soon be victims of the disease, and that they would afterward become cured by drinking the same water if boiled, or by moving to some other part of the country. While all these outward influences may tend to cause goitre, yet there must be some general cause for its appearance other than an extrinsic one; some diminution or perversion in the gland secretion, possibly some other bodily influence. There is, undoubtedly, a marked sympathy between goitre and the female pelvic viscera, as is evidenced by the increased swelling of the gland during menstruation and pregnancy; by its first appearance, in the majority of cases during the months of puberty, and its occasional appearance, for the first time, with fibroid tumors of the uterus. But we are, as yet, wholly ignorant of this relationship. Certain remedies and toxins have been known to cause goitre; pilocarpin has been known to produce this effect. A. STENGEL calls attention to the frequent occurrence of this condition during the course of certain anemias and particularly that of chlorosis.

Whatever the etiology, be it microbic infection, high altitude, an over-nitrogenous diet, heredity, or water overladen with lime salts, the fact of its being a menace to human life in all cases should provoke more attention than this disease has from the general practitioner. The mere outward manifestations of swelling and deformity should not be our criterion for treatment; we should recognize in the small goitre, the possibility of malignant change, of its greater susceptibility to treatment, of the pressure upon important nerve trunks and blood-vessels, and of cystic degeneration accompanied by its results. Not infreqnently deaths occur from small goitres, and what should make this last point more impressive is that we do not know the cause of death in these cases. The simple fact of size is not our guide—some small goitres produce profound disturbance, while others may be of enormous size and do but little harm. This depends much upon the character of the growth and the pressure made by it. I have had two or three cases in which the growth would only be recognized by palpation, and yet they complained bitterly.

BOUFFLEUR, of Chicago, says, "The comparative frequent occurrence of sudden death in patients afflicted with goitre of even small size gives additional emphasis to the indication for regular, systematic medical and surgical treatment in all cases."

Malignancy is often the result of a simple benign growth in the gland, and of the malignant class VIRCHOW states none is so prevalent as the round-celled sarcoma.

It is unnecessary to say anything in general upon the diagnosis, as the symptoms are usually so plain that they are unmistakable. I only wish to call attention to the fact that many cases of benign goitre may possibly be mistaken for Graves' disease. I refer to that hard, fibrous enlargement which rests heavily upon some important nerve trunk and produces through pressure such allied symptoms as nervous tremors, palpitation and rapid pulse. It would be but natural to think that these symptoms were produced by some interference with the cervical sympathetic, and I would be inclined to think that probably some of the cases that have recently been operated upon for Graves' disease with such flattering results may have been simple goitres producing pressure.

The classification of the disease as I give it is largely an anatomical one used chiefly for convenience as a reference to treatment:

(1) Parenchymatous enlargement;
(2) Cystic enlargement;
(3) Vascular or pulsating enlargement.

From the first class our patients are mainly derived, at least in Detroit. I say "at least in Detroit" because by referring to the "American Text-Book of Surgery" we find that the cystic enlargement is most common. This, certainly, is not true here.

Parenchymatous goitre consists in not only a hypertrophy, but a hyperplasia as well of all of the glandular tissue, the follicles of which are filled with a colloid or gelatinous material. In the process of enlargement, any one of the different tissues or structures of the gland may outgrow the others, and we would according to circumstances have (1) the hard, uneven and unyielding fibrous type, which, according to my observation, has been quite generally unilateral, or (2) the soft and rapidly growing colloid goitre which is, I believe, more commonly bilateral.

I have thought it probable that it was from this last mentioned variety that the cystic goitre is developed. This, however, is only conjectural on my part. In parenchymatous goitre we usually find the whole gland involved and its surface smooth and regular. The colloid variety of this class I believe is often best treated by electricity; either by cataphoresis or by electrolysis on the belief that it best stimulates absorption. I remember a case I had some three or four years ago which I had treated in the usual way with little success when I determined to try cataphoresis. I applied the negative electrode which had first been saturated with a strong solution of iodide of potash to the tumor and the other to the back of the neck. I turned on the current until the patient complained considerably of pain. The application was of about ten minutes' duration. I asked the patient to call again in three or four days, but I did not see her for over a year, when she said she was afraid to come at the stated time as the last sitting had burned her so much, but to her surprise the tumor then began to decrease, and in a few weeks disappeared entirely. I believe this due entirely to the stimulation of the current and not to cathodal diffusion, as some believe. Undoubtedly electrolysis practiced by the insertion of a needle deep into the substance of the gland is often of great benefit. But in the longer standing enlargements, in which the knotty fibroid growth has taken the place of the colloid, we must not expect such rapid transformation as in the case above, and yet it is in this class of enlargements that I believe it to be particularly serviceable, for we cannot hope for much good to come from internal medication. It is here where operative interference is often found necessary.

Iodin and its compounds have probably enjoyed a larger patronage than any remedy yet known. How it brings about a cure in many cases is yet a mystery; whether the cure is wrought by feeding the whole glandular system, or whether the drug enters into combination with the thyroid secretion direct, remains to be demonstrated. Bauman and Roos isolated what they call the active principle of secretion of the thyroid gland and named it "thyroidin," being composed of iodin in organic combination with proteids. Iodin has a place, at least, in the treatment of goitre, if for no other reason than our suspicion of struma being responsible for its occurrence. Indeed, is it not a question that all forms of goitre are a transmitted tendency to chronic disease? At least there is a hereditary element. What it is, and what its specific influence, I do not know. We must not forget, however, that chronic iodism produces a condition which has many characteristics of Graves' disease, and in our anxiety to relieve our patient by large doses, we could mistake these for the more serious trouble. Thyroid extract was first used by **Murray**, in October, 1891. In 1892, the whole fresh gland was given instead. With the latter I have had no experience; with the former considerable. I believe thyroid extract capable of curing all cases that are applicable to the iodin treatment, and many that are uninfluenced by it. It is quicker in its action, more easily borne by the stomach, and less likely to produce unpleasant symptoms. **Bauman** found that not all thyroid glands contained the same amount of active principle — thyroidin—and therefore gives that instead of the whole gland. Others have not found thyroidin so effectual. The glycerinated extract of thyroid gland has been used intraparenchymatously with what results I do not know. **Angerer** believes thyroid extract to be particularly serviceable in goitre among young girls who have chlorosis. I have used both the iodin and thyroid treatment to a considerable extent, and certainly feel that the latter is far superior.

In probably half of all the cases that have come under my observation I have used parenchymatous injections of solution of protonuclein, three grains, to sterile water one drachm 100° temperature, permitting this to stand for twelve hours occasionally shaking it—permitting it then to settle and using ten minims of the supernatant liquid three times per week. This is a simple method, and yet if it is not carried out in the strictest detail respecting asepsis, many bad and alarming results might follow. The solution as above prepared is injected directly into the substance of the gland, thrusting the hypodermic needle into its shoulder and then withdrawing a trifle, when the solution is thrown in. The pain to the patient is nothing, because it is done much more quickly than the ordinary hypodermic injection. This method of intraparenchymatous injection should always be looked upon as a minor surgical operation, and every possible detail of preparation made as regards the asepsis of not only the solution, but the needle, syringe barrel and the patient's neck.

I never keep the solution longer than forty-eight hours. Three or four times I have had suppuration follow, which meant that I was careless in detail somewhere. The usual symptoms noticed by the patient after the injection are a metallic taste in the mouth, and, if the dose is at all large for the patient, a pounding in the head, as they call it. These complaints are common and come on immediately after, and in some instances before the needle is withdrawn. I am at a loss to explain the cause, because no drug could be absorbed in so short a time. The claim for the remedy used in this way is that it more quickly reduces the enlargement; it does away with the long administration of drugs, and we have the patient more under our control. I thought at first that the cases may have been those that would have acted as well with the parenchymatous injections of anything else, plain cold water, five per cent. solution carbolic acid, et cetera, but after trying these first, I found they produced little or no effect. I never have used this drug in any other connection, and know little about its use outside of this field, but in parenchymatous enlargement, it certainly acts phenomenally.

Vascular or pulsating goitre I have never seen. Ergot and tincture of strophanthus are used medicinally. Tying of the thyroid vessels has been done but with little success.

Cystic goitre is usually recognized by its smooth, even surface, by being one-sided and often fluctuating. Purely medicinal measures are of no effect. If the contents of the cyst is clear or thin but blood-stained, it may be withdrawn by an aspirating needle and then tincture of iodin or iodoform emulsion thrown into the cavity. A few sittings, possibly one, may bring about a cure, but if the cystic contents be thick, and broken down portions of the sack and gland be found, probably nothing short of extirpation will be of any avail.

THE RELATION OF MUNICIPAL LABORATORIES TO THE CONTROL OF TUBERCULOSIS.*

By AUGUSTUS W. CRANE, M. D., Kalamazoo, Michigan.

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OUR medical forefathers delivered us from smallpox, but left as our medical inheritance the prevention of a no less terrible disease. The control of tuberculosis is marked as the most important medical undertaking left over for the next century. We already know the dangers of this world-wide scourge; we understand with equal clearness the means of its prevention. The whole work begins and ends with the tubercle bacillus. Careful statistics have made known to us the enormous death rate caused by this quiet, insidious plague. We have many times listened to the statement that of over seventy millions now living in the United States over nine millions will die of tuberculosis unless something is done to prevent it. We are acquainted with the ways and means by which it is spread daily among all classes and ages of men and women. We are no less familiar with the means by which this may be checked and the disease practically banished from civilized communities.

Then why is this terrible disease not banished; why are not the nine millions of the next generation to be saved?

It is because the question is more a matter of sociology than of bacteriology. Scientific teachings of this kind cannot be carried into execution without the consent of society. The final solution of the problem is sociologic, and this is a matter of evolution, and will take a weary struggle of years.

The municipal laboratory is obviously not a "*panacea*" for this state of affairs. But let us marshal forth the scientific and sociologic factors of our problem and see in what relation to these the municipal laboratory stands. Our scientific factors are:

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* Read before the MICHIGAN STATE MEDICAL SOCIETY, at the Mackinac Island meeting. July, 1900.

First.—The earliest possible diagnosis of each case of tuberculosis, human or animal.

Second.—The report and record of each case to some central authority.

Third.—The isolation or surveillance of each case and the disinfection of sputum, persons, and surroundings.

Fourth.—The destruction of tuberculous animals and the prevention of the sale of tuberculous food.

The sociologic factors are political, professional, social, financial, and educational. The political factor is of extreme importance because from this source must come the financial support of the crusade. City councils and village boards of health have nearly everywhere developed a stubborn opposition when asked to establish laboratories where sputum examinations and other tests may be made at *public expense*. The health officer is only too often appointed for political reasons and is too often incompetent to initiate or to carry out the necessary work. Moreover, the niggardly salary of the average health officer in Michigan usually discourages even good men from doing more than the mere letter of their stated duties.

The professional factor concerns physicians chiefly. There is a general disinclination to report cases of consumption. The physician may be uncertain of the positive diagnosis. He does not wish to antagonize the patient and a long list of the relatives and friends, and thus often seriously injure his practice, upon which depends the support of his own family. The sanitary supervision of a case is likewise often a matter of difficulty. The patient and the family often object to regulations which imply, and to the distribution of pamphlets which assert, that the patient is a source of infection and danger. The patient feels like a leper and the house seems to the family and friends like a lazaretto. In truth, it is. Strict regulalations should be enforced and the information should be imparted, but is it rightfully a physician's place to give such information to the patient and to direct such regulations? The patient does not call in a physician and pay him in order that the public health shall be preserved. The public should pay for public benefits. But in the absence of any better system these duties have been in a large measure voluntarily assumed by conscientious physicians.

The social factor is indefinable at many points, but none the less important. It includes public sentiment regarding the subject of tuberculosis. Shall the consumptive be allowed to mingle unrestrictedly with his fellows on the sidewalk, in the street car and railroad train, in churches, theaters, et cetera? Certainly anything like a strict isolation of the consumptive is now regarded by physicians and people in general as a cruel and unjustifiable measure.

The educational factor is a powerful one in bringing about the solution of the problem. The distribution of pamphlets by boards of health, newspaper and magazine articles, papers and discussions in medical societies, and the conversational utterances of physicians, have done the most that has yet been accomplished. Public ignorance of the dangers and infectiousness of tuberculosis is the chief cause of public apathy, and the misdirection of public sentiment.

Let us now consider what relation a municipal laboratory would bear to these scientific and sociologic factors. It would stand in the closest possible relation to early diagnosis, and to prompt report of cases. In a less degree it would influence the supervision of cases and the disinfection of sputum, persons, and premises. Of the sociologic factors it would powerfully influence the professional and educational phases and to a less extent the financial and social elements.

From the municipal point of view the laboratory would exist for the better preservation of the public health, but from the point of view of the patient and physician it would be a means free of expense of making a diagnosis. A municipal laboratory is impersonal and official. A host of considerations which deter physicians from reporting cases, would be swept away. If sputum were brought for examination, no report other than the regular report of the laboratory to the health officer would be in any way necessary. The laboratory report to the attending physician would make it very easy to communicate the results to the family. No ill feeling could be directed towards the doctor, and the doctor would no longer be a prey of doubt concerning an early diagnosis. The responsibility either way would rest on the laboratory. There would be no chance for jealousies to exist between the laboratory worker and the attending physician. The patient would not be brought in direct contact with the laboratory. The sputum, with name and address could be brought or sent to the laboratory. An immediate report by telephone and in writing would be made to the physician, while a weekly report of results could be given to the local health officer. It is difficult to conceive a method more peculiarly adapted to completing the report of cases.

The health officer acting on the laboratory report could, with the consent of the attending physician, direct the disinfection of sputum, person, and premises with confidence and authority. The physician could, if he wished, thus be relieved of this very disagreeable work. No hard feeling could be felt by the patient towards the physician because the part played by the laboratory and health officer would be very evident.

The laboratory report would have a direct educational value. The patient, family, and physician would be brought face to face with the grim fact that living germs of consumption were contained in the expectorated mucus. When this point is once firmly fixed in the public mind, our problem is half solved.

Thus we see that the municipal laboratory would be a force in making the diagnosis of tuberculosis, in securing the report of cases, in bringing about the necessary disinfection, in smoothing the path for the doctor, and in educating that part of the public which is most immediately concerned.

In considering the practicability of municipal laboratories, it must be borne in mind that the examination of sputum would not be their only function and purpose. They would be many-sided instruments for the preservation of the public health. The examination of cultures from sore throats in suspected diphtheria, the examination of the blood for Widal's serum reaction in suspected typhoid fever, and the examination from time to time of the public water supply, suggest the wide field of usefulness open to such institutions.

Laboratory facilities would thus be within the reach of every general practitioner. Laboratory work which is of direct benefit to the public health should be paid for by the public, but other laboratory work could be done at any physician's request, and paid for by the patient who receives the benefit. Such work would be the examination of pus and discharges for gonococci, special analysis of urine, analysis of stomach contents after test meals and the microscopic examination of the blood. The value to the general practitioner would be unquestionable. Municipal laboratories have reasons for existence which cannot be ignored. We must not, however, lose sight of the great reason for all public health work, a reason which stands above every financial consideration, namely, the saving of human life.

Success in the lines we have indicated can only be achieved when the laboratory is local, and when those examinations which are for the public good are paid for by the city. A laboratory a hundred miles away cannot be a living force in a community. Every town large enough to have a city government should have some provision for laboratory work. In many cases some young physician fresh from the college laboratories can do the work with his own private equipment. In large cities it may be desirable to have a city laboratory under the charge of a paid expert. But the work should be generally inaugurated. The expense is moderate. A saving to cities would be seen to be considerable if we take into account the resulting decrease of sickness among the poor who must be cared for at city expense when placed under quarantine.

If municipal laboratories are so necessary to the public health service, so useful to physicians, so economical to good city government, and so valuable in the control of tuberculosis, then why not have them? We do have them with conspicuous success in cities such as New York, Boston, Chicago and the like. A start has been made in a number of Michigan cities. But public and professional apathy is very hard to deal with. The matter should be pushed by our State Board of Health. It should be discussed in our state and local societies. It should be agitated by every health officer in Michigan. It should be a matter of occasional conversation between physicians and aldermen. It should be made clear and intelligible to the general public.

Tuberculosis must be controlled. The medical profession must do the work. And the municipal laboratory will be one of the most potent instruments in the final accomplishment of this end.

THE DETROIT ACADEMY OF MEDICINE.*

By ALBERT B. LYON, M. D., DETROIT, MICHIGAN.

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It seems like a truism to say that a human society, community or nation cannot be either better or worse than the individuals who compose or organize it. Yet the facts of history past and contemporaneous emphatically contradict such a proposition. The reason for this is not difficult to find. The individual life is full of inconsistencies and contradictions. Individual character, to begin with, is not a thing inherited, or formed once for all in early life. It is for any given moment the resultant of a complex of influences, some from within, some from without, representing in one individual a normal growth in accordance with the laws of evolution, in another the retrogression which equally represents a phase of evolutionary phenomena.

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*Read before the DETROIT ACADEMY OF MEDICINE.

It is evident that, under such conditions environment is by no means a matter of small moment. For the individual it may almost be said, indeed, that it is all important. To every man come at times aspirations after something better than the experiences of the past, to be realized only by strenuous persistent exertion and the sacrifice of what has seemed in the past best worth living for. How easily the older habit of action crowds out such momentary aspirations we all know by experience. Most of us know, too, how wonderfully a new purpose—whether or not it is inherently noble—is vivified and made operative by a little companionship in what is unaccustomed effort.

So it is that men in associating themselves for any object find their purposes strengthened and steadied to such degree that they no longer have difficulty in overcoming the inertia of individual habit. Their organization represents consistently and always an ideal which in the individual is dominant only momentarily. It becomes thus to the individual a source of inspiration and strength. If the objects sought in the organization are base the same thing holds true. The individuals so affiliated are debased as though by association with an incarnate demon of evil.

Indeed we may affirm that every organization of human beings, natural or artificial, has a moral character which influences powerfully the individuals composing it. We are justified, therefore, in feeling towards any such organization, be it family, municipality, state, nation, church, society or association, with which we may be connected, either pride or humiliation according as we find the ideals it represents elevating or debasing to us as individuals. To us here gathered there may be possibly a question whether the pride with which we speak of Detroit, of Michigan, of our political party, of America even, is without reservation. We need have no such division of feeling, I believe, in confessing ourselves Fellows of the Detroit Academy of Medicine.

For thirty years this organization has held a recognized place in the medical world of our State. Insignificant in point of membership, holding aloof religiously from professional politics, with no names on its fellowship roll perhaps of preeminent distinction, it has been nevertheless a power in the profession. Originating in the necessity felt by a few physicians for some organization representing purely professional activities, the Academy has maintained through all the vicissitudes of its existence this ideal. It has always stood for harmonious cooperative work in professional lines, and so its doors have been open only for those willing to work. It has been eminently democratic in its spirit. There has never been among its fellows ambition for office. It has been held, of course, an honor and a privilege to serve the Academy as an officer, but no office in the society—not even that of treasurer—has ever been held a sinecure.

Thirty years have brought great changes. We note them regretfully as we recall names and faces once inseparable from our thought of the Academy, now memories of the distant past. We see them in the visible tokens which time bestows with a generosity too little appreciated on those of the original members whose period of useful activity he has extended to the present year of grace, and equally we see it in the appearance here on equal footing with ourselves — nay with equipment far surpassing any we could possibly have obtained — of those who were infants less than thirty years ago. Still more strikingly is it evident in the subject matter of our discussions from month to month.

I remember well the expression of our good professor of materia medica in the University of Michigan, reiterated by him, I am sure, less than thirty years ago. "The practice of medicine," said he "as we know it, is simply rational empiricism." Yet the able and learned professor expounded to us elaborately certain chemical theories of the action of medicines which seemed to be worthy to be called scientific. These strike us today as not only inadeqate but as quite bizarre. There is still plenty of scope for "rational empiricism," but we are confident now, as we were not thirty years ago, that we hold in our grasp some of the principles of a true science of therapeutics.

How much can the Detroit Academy of Medicine claim of the glory of this advancement of our professional knowledge? Such a question would reveal a total lack of comprehension of the spirit of the Academy. It is glory enough for us to be the fellow-workers with those who have made the brilliant discoveries it was not the individual fortune of our members to make. For us it is sufficient that we do faithfully day by day our little part in broadening the scope of scientific knowledge and increasing the efficiency of the means we have learned to use in combating disease. And when we think of it, it is this fidelity to the trust imposed by social relations, using the word in its largest sense, that is the essence of all heroic living. It is this which distinguishes the world's WASHINGTONS from its CROKERS.

That the Academy has left behind it a record for substantial work of scientific and literary merit is not to be denied. But this is of less consequence than the fact, equally indisputable, that this little body has made itself felt throughout America by the part its delegates have been able to take in shaping opinion and action in the direction of elevating the standard of requirements for graduation from medical colleges, and in raising the general tone of the profession as represented in its larger organizations. It is not the time now to recount in detail the achievements of the past.

The professionalism for which our organization stands today as it has stood consistently these thirty years must in the near future put forth its full power to maintain itself against its arch enemy, commercialism. Material prosperity is having its inevitable demoralizing influence. More and more the civilized world allows itself to accept the popular delusion that money is of more worth than men, and so men debase themselves to the level of money-getters. Only as nobler ideals are emphasized and illustrated may we hope that this critical time in the history of the world shall be a prelude to the realization for humanity of the possibilities of which seers in all ages have had entrancing visions. If not, history must repeat itself once more, and again and again until man learns at last the lesson that a social order resting on the foundation of a selfish individualism is in the nature of things unstable.

The conflict between brute selfishness and the essentially human conception of solidarity of interest has been age-long. The law of the survival of the fittest must seat man at last on the throne that the history of the ages shows to be his by right. But only by following the gleam of the ideal and resolutely refusing to listen to the siren voices that seem so fully to satisfy deep longings in our nature—that old unsubdued brute nature of ours—may we hope to draw nearer to that which is the final goal of humanity. Every organization which stands, like this one of ours, persistently for the highest ideals we are capable of entertaining, fulfills a mission in the world toward this end. My one word to you tonight, Fellows of the Academy is, "Follow the gleam."

SOME VIEWS ON CURETMENT OF THE UTERUS FROM THE STANDPOINT OF A GENERAL PRACTITIONER.*

By ELMER D. GARDNER, M. D., Hancock, Michigan.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

In this paper, I make no pretensions to discuss all conditions that usually indicate curetment of the uterus as a means of treatment, nor of the minute pathology of the different forms of disease in which it is generally used. If anything I say suggests an agreement or a disagreement, I ask for a candid discussion, not only from the specialist, but from the general practitioner. I aim to give a very brief summary of the practical points from the standpoint of a general practitioner whose early practice was remote from medical men and hospital centers. In the first years of that practice when in attendance at the American Medical Association I listened to the most eminent specialists in gynecology, I received the impression that the general practitioner should be held responsible for a long list of bad conditions that confront the specialist, and which are often due to procrastination or lack of accurate diagnosis and prompt and thorough treatment. I was impressed from many sources with the idea that there were but few things which we were supposed to do aside from recommending the patient to this or that specialist. Doctor Henry J. Garrigues, in a recent paper read before the College of Physicians, of Philadelphia, says among other things: "The general practitioner, who, in most cases, is not capable of making even a gynecologic diagnosis, is very apt to put in a pessary, or scrape out the womb, often with the result of starting a pelvic inflammation which may end in death." We young practitioners saw our patients going to specialists or quasi specialists who were numerous in the villages and cities. The specialist in gynecology was among the most active. The lady who consulted him and came away without a curetment of the uterus, a trachelorrhaphy, or a perineorrhaphy and had one ovary intact was to be congratulated. I am glad to think there is a reaction toward conservatism in gynecologic operations. When we look over the statistics of hospitals, we find curetment by far the greatest in number of operations, and wonder if they are really necessary. In the same paper Doctor Garrigues says: "A little later curettage, one of the oldest gynecologic operations, came into vogue. It has held its sway ever since, and is at present in that period of abuse through which it seems inevitable that every useful operation must pass." I think it would be instructive to follow these cases and if possible take an internal view of the uterus and its surroundings and determine the condition of the patient, physicially and mentally. I might compare the results of the general practitioner's work with the results of the over-zealous operator with credit to the former. We bless the honest, conscientious specialist to whom we are ever glad to turn in times of great responsibility.

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* Read before the Michigan State Medical Society, at the Mackinac Island meeting, July, 1900.

The operator should have a definite knowledge of the conditions he is to relieve, based on pathologic and bacteriologic conditions and clinical experience. The recent graduate is skilled in pathology and bacteriology, and is impressed with the idea that his diagnosis will be accurately made from this high standard. He will examine specimens for pathologic changes and bacteria, make blood counts, et cetera. That does very well during the first few years of practice when he has little else to do, but he will depend on this means of diagnosis more the first few years than later, when he will depend largely on experience. We are instructed that all scrapings from the uterus should be examined under the microscope. In the city the surgeon has but to direct the pathologist to make the examination and report, and the general practitioner can do the same. We hope the time will soon come when there will be an expert microscopist within reach of all general practitioners. The graduate of a few years ago is not so familiar with bacteriology and pathology as the recent graduate and consequently must depend on practical experience.

I shall discuss curetment in three conditions, namely: (1) To remove the remaining portions of an incomplete abortion. (2) To remove septic matter after labor. (3) The removal of the superficial portions of the uterine mucosa in endometritis.

The physician spends many anxious hours waiting for the successful end of an abortion. We are advised by the extremist if abortion is sure that the patient should be given an anesthetic, the cervix dilated and the uterus curetted with a sharp curet, and the decidua removed, whether there is sepsis or not. In the light of my past experience, I am not yet convinced that such a vigorous procedure is necessary. I do not think we are justified in putting a patient under an anesthetic until we are sure it is necessary. The patient may survive the immediate effect of the anesthetic, but I fear there are, possibly, remote effects which we never take into consideration. I think the abortion may be so managed and nature so assisted that the use of a curet will be seldom needed. In the first few years of my practice I used the method of carefully and tightly tamponing the vagina and gave a sedative, if necessary, and waited for the pains to do the work. In a few hours I removed the tampon and usually found the abortion complete. Sometimes it was found in the cervix and easily removed. In cases of early abortion, if a bad odor developed, I dilated gently with the finger or a dilator, removed what was left with the finger or a dull curet, used an antiseptic intrauterine douche and drained. I never packed the uterus for the purpose of drainage. I had to dilate two or three times in some cases, but seldom more. I swabbed the uterus with Churchill's tincture when there were symptoms of sepsis. At that time I thought the hemorrhage was a dangerous factor; but later I thought less of the danger of it and left off tamponing, and immediately dilated with the finger, if possible, and removed the contents of the uterus with the finger. If I could not do this and hemorrhage continued, I used the tampon with gratifying results. Afterward I tried the more vigorous treatment with the curet without giving nature a chance, and following this I had the worst case of sepsis I ever saw. It may have been due to the improper use of the curet and lack of thorough operation, or lack of asepsis, but I returned to the tampon method, and when the abortion is progressing favorably I do not curet. When all else fails and septic symptoms appear and flowing is severe and frequent, curet with care, using the antiseptic cautions of a major operation. DOCTOR J. F. W. Ross gives an opinion: "It is only after excessive flow for some weeks after early abortion that the uterus should be interfered with. I have seen a large number of such cases recover perfectly without curetment or any other treatment."

After the second month to the sixth month, the tamponing may be used if hemorrhage is severe. If the placenta does not come away, and it is adherent in its entirety, I watch the patient for hemorrhage and symptoms of septicemia, but do not interfere until they appear. In cases wherein the placenta is partly adherent and partly nonadherent, hemorrhage is quite severe and sepsis more probable, then the tampon method will remove it quite as well as the curet. In one case of abortion at four months the placenta was firmly adherent. I kept the patient under close observation and at the end of four weeks it came away with very little trouble. If hemorrhage continues, dilate and curet with the precautions before mentioned and drain by keeping the os open, but do not pack the uterus. I often apply Churchill's tincture of iodin or ichthyol and glycerin to the intrauterine membrane. We are taught to examine the placenta after labor to determine if any of it is left in the uterus. I do not think we can always tell; even then, small pieces may be left. I think we are all agreed that there is more danger in cureting in these cases than after early abortion. If all the septic material is not removed absorption takes place very much more readily, because the granular protective zone is gone. If after labor septic symptoms occur, dilate, if necessary, and use antiseptic douches, and possibly iodin or ichthyol or a similar preparation. If symptoms continue, determine with the finger, if any of the placenta is present and remove it with the finger or a dull curet or forceps. Use hot antiseptic douches supplemented by ichthyol and glycerin. If the sepsis still continues, shall we curet? If we remove all the septic material we may have no further trouble, but if it is not thoroughly done, it would be better not to be done at all. I saw a lady several days after labor having severe septic symptoms. The perineum was ruptured and the cervix torn, and both covered with a membrane or slough which looked like a diptheritic membrane. The physician in attendance said that the slough was due to the application of formalin to the parts and internal uterus to destroy the sepsis and prevent absorption. I think that here the caustic effect was too strong. The doctor in attendance said he examined the placenta and thought there was none left within the uterus. I dilated and removed several pieces of placenta. I used the dull curet gently, and gave an antiseptic intrauterine douche. I sent her to a hospital and curetted thoroughly, I thought, but the symptoms became worse. After a few days I curetted again and that was followed by a chill and a temperature of 106.5°, and I thought I had made a mistake. The next morning I found the patient no worse and after a long convalescence she recovered completely. Would she have recovered without the curetment?

In the cases due to the streptococcus the curet has no use. We are advised by some to use it. The following was my only case due to the streptococcus: One week after labor the patient had a severe chill and high fever. The fever was very erratic, fluctuating from 100° or 101° to 104°, 105°, and 106° inside of two hours. The trend was downward to the end of the week, when it was normal for a few hours, then rose higher than before. Examination of lochia gave no evidence of retained placenta and no bad odor. I gave malarial remedies without effect. The second week was a repetition of the first. At the suggestion of DOCTOR HUGH MCCOLL I gave antiseptic intrauterine douches night and morning and applied iodin to the laceration of the cervix. This was continued for thirty days. A little flocculent matter came away with the first water used, and it was not till this flocculent matter ceased that the temperature became normal. I believe it would have been a grave error to have curetted.

I shall not consider the different classifications of chronic endometritis. After considerable study I am persuaded that it is a very indefinite disease, and it is not as prevalent as is supposed. DOCTOR HOWARD KELLY reports that out of one thousand eight hundred cases only nine were true endometritis, and other specialists have expressed the same opinion.

Two varieties of endometritis will cover the essential symptoms of all.

(1) Interstitial; (2) Glandular. In both, the principal symptom is menorrhagia. In the interstitial we have a purulent and mucopurulent discharge. In the glandular we have leukorrhea, and there is hemorrhage in both. The catarrhal conditions which are not true endometritis we find in young unmarried women, due to vitiated blood, exposure, improper care at the menstrual period, flexion, et cetera. The married women we may treat locally as conditions indicate, and repair the perineum and cervix and correct flexions. I do not think a curetment is indicated unless repeated severe hemorrhage or excessive flowing is present. I have had very little experience with endometritis due to the gonococci. I think even greater caution should be shown here because of the probable adhesions and disease of the tubes. In nearly all communities there is a physician who strives for a reputation in treatment of diseases of women and who operates frequently. Sometimes we are impelled to do the same, in order to hold our patients, for frequently these operations become a fad among the women as well as the physicians. These overzealous physicians are continually reminding the women that they have some disease of the female organs to which all bad feelings are due. The neurotic women consent to these operations willingly. The idea of operating is to work on the mind, but the benefit is of short duration,

and in time their condition is worse than before. In this class of cases the mind should be diverted from the sexual organs. I curetted and repaired the cervix in such a case with beautiful results, but the patient was not improved, neither was my reputation, for in due time she gave birth to a fine boy, and after that she was well. Some of the bad things resulting from curetment are: In complete operations opening the way for sepsis; and if the operation is too vigorous we may have perforation, atresia or peritonitis; and the immediate and remote dangers of the anesthetic. In order to avoid the curet: (1) Tampon; (2) Dilate and drain; (3) Use antiseptics intelligently; (4) Use proper local and systemic treatment; (5) As a rule, curet only when hemorrhage is frequent and profuse, and then with the antiseptic precautions of a major operation.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, OCTOBER 24, 1900.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR H. WELLINGTON YATES read a paper entitled "Goitre and its Treatment." (See page 78).

DOCTOR P. G. SANDERSON: I heartily agree with what the doctor has said in regard to the pathology and etiology of goitre. Some authors recommend in the treatment, I believe, or as a prophylactic measure, in districts where this is prevalent, the boiling of water. This would signify to me that they have an idea that it might possibly be due to the salts found in the water. In regard to the use of thyroid extract, it has been said it is of great benefit, particularly in those cases wherein the connective tissue is prevalent and the glandular portion is scarce. It seems to me that when the gland is growing rapidly and the pressure systems are manifesting themselves, that palliative treatment should be done away with and that we should resort to the radical measure of partial or incomplete removal.

DOCTOR OWEN: The old method of using from one hundred to one hundred and twenty-five cells in the treatment of goitre has disappeared because of the inability to measure the quantity of electricity. The trouble has been, people in using electricity have not measured their currents. For electrotherapeutists I will speak as well as for others: whenever you use electricity please find out how much you are using, because it is of the greatest importance. MARTIN and MASSEY, of Philadelphia, gave four hundred, five hundred and six hundred, and when the European authorities heard that such men as MARTIN were using four hundred amperes they held up their hands in horror, but now six hundred amperes are employed. It should be measured just as you measure morphin or any other anesthetic.

Doctor Donald: My experience is this: We have a very large number of cases of goitre in Detroit; they wander into our clinics constantly. We find them particularly amongst the French Canadians who come from the other side of the river, but we have them on this side of the river as well, and to a limited extent among the Poles, usually among young girls. We find them occasionally among the Germans, but rarely. We have had no history among the girls so far as we can find out, of any hereditary influence. We put them upon a steady treatment of tincture of iodin, applied externally. Side by side with us **Doctor Polozker**, who conducted the children's clinic, employed the thyroid extract, and he secured about the same results in his clinics as we secured in ours. Unfortunately for our experience, **Doctor Polozker** secured good results much more rapidly than we did. The success was, however, considering everything, very favorable.

Doctor Robbins: Why is it that we see so many goitres in young people? We do not see these goitres in such large numbers in people after they reach adult age. I have felt very confident that a large proportion of children have not succumbed to the disease. If that is the case, they have not died but recovered in large measure from their goitres. I think it probable that the goitres we see in young girls disappear without treatment as the girls grow older. However, two years ago I treated a large number of cases of goitre of the general diffuse variety with injections of pure carbolic acid, half carbolic acid and half iodin. In these patients the necks were measured every two weeks, and a large number gradually, steadily, markedly improved, and the results were very well marked. These cases were not given treatment by any other medication. It has seemed to me that the use of iodin externally has its influence. I never derive good results from thyroid extract. The cystic forms are quite often well treated by aspiration and injection, but that is a dangerous procedure. After having seen these glands operated on and observed the large veins that cover them we will see that it is safer to make a free incision and thereby avoid liability to puncture these veins, because we cannot tell where they are situated and they are very troublesome when cut.

Doctor Yates: In looking up some authorities on this subject, in the preparation of my paper, I found that the injections of iodin, as suggested by **Doctor Robbins**, had really proved dangerous, but in just what way I did not learn. I never have used it, although I have seen it used frequently. In regard to the fact of goitre being more prevalent amongst French Canadians, I was wondering whether that was due to the fact that they were French Canadians or due to their locality; whether it is, on the contrary a low atmosphere rather than a high altitude. In regard to many cases of goitre being innocent, of course we know that a large percentage probably disappears without any treatment whatever. Many patients grow up and live to old age and their goitres, perhaps, only increase very little, but their tendency is to increase always, and especially if the subjects are child-bearing women. Another point is, which of these subjects during childhood, is likely to grow up to adult life and give us trouble. It is not always the largest tumor that gives the greatest disturbance. It may be quite true, as **Doctor Donald**

mentioned, that iodin gives nearly as good results as thyroid extract, but I am quite positive that thyroid extract will take effect much more rapidly. One of the first cases in which I used protonuclein was in a boy who had a frightful deformity, but the goitre was soft, a variety which one would naturally expect to yield easily. After nine days I measured the boy's neck, and his shirt collar was looser than before the treatment.

EDITORIAL ARTICLES.

WHERE SHOULD SEXUAL HYGIENE BE TAUGHT?

THE readers of The Physician and Surgeon have had presented to them, during the past few months, three interesting papers bearing directly upon medical education in the public schools. The first two indicated opposing views, especially in regard to public instruction in sexual hygiene, according to which the profession as well as the laity are divided. The third exemplified the teaching of some of the elementary principles of physiology. In referring to them in this connection nothing else is intended save the drawing of attention to them for as fair statements of certain phases of the subject they are well worthy of perusal and thoughtful consideration. It must occur to most readers, however, that, in spite of the cogent reasons adduced and the excellent plan of instruction submitted, the subject is far from being disposed of.

The function of the public school to train the mental faculties and teach science rather than mere facts is clearly brought out. The desire is also expressed that a knowledge of sexual hygiene be more generally disseminated and the proposal is announced that this be done through the medium of the common schools. The carrying out of this idea would not be wondered at in these days, when the public schools are made subservient to the wish and whim of every handful of individuals, and yet the expediency of it is open to serious doubt.

DOCTOR McGRAW has called attention to the disregard of real knowledge by medical students, to the harm possible from public discussion of sexual matters, and to the rank abuse of quack literature thrown upon every doorstep and flaming in nearly every newspaper, and the significance of his remarks is unquestionable. There are other phases of the subject, however which are seldom brought up. One is the role of the public school in our social economy. In importance as well as in point of time the home has preceded the public school. The school was established as an adjunct and it will hardly be contended that it should ever be anything else. The home of necessity rests upon the assumption of social purity in sexual matters and this whole subject belongs essentially and by privilege to the home. No matter how poorly in some instances the home is administered the presumption of the public school to teach sexual hygiene would be usurpation of the most sacred duties and responsibilites of the home. It is notoriously and unfortunately true that the tendencies of modern social and industrial life are in many respects for the individual and against the home. Witness the industrial competition between the sexes and in consequence the growing indisposition among both women and men to marriage. One of the dangers of the present is the lessening of the duties and sphere of influence of the home. There has risen a fad in regard to the public school and its possible uses. The curriculum has, according to a widespread respectable opinion, already outgrown the capabilities of the average pupil. A very few extravagantly modest individuals would offer their children no common sense at seasonable times upon sexual matters. A few opinionated people, who want to be cocksure that every child is taught what his or her genitals are for and how to use them, would take the chances of instruction upon those points by a politically appointed agent, but we confidently believe the great majority would contradict the expediency and authority of the public school in this regard.

ANNOTATIONS.

THE INSTINCTIVE ASSOCIATION OF BREAD AND BUTTER.

It is a fact that bread and butter have for ages been instinctively associated as articles of food, and yet only modern physiology has been able to put upon this association the stamp of approval. Hemmeter is quoted in "Progressive Medicine" as stating that neither can be very well digested in acid media, but that combined they are not difficult of digestion. Fat tends to arrest the secretion of acid gastric juice and for that reason is not wisely combined with proteid food especially by those with weak stomachs. On the other hand fat stimulates pancreatic secretion and thereby aids the conversion of the starch in the bread, which is the larger part of it, into maltose and dextrose, Furthermore bread furnishes about one-third of the whole amount of food ingested in health and with butter creates an appetite for and improves the taste of other kinds of food.

IS FERTILIZATION A CHEMICAL PROCESS?

What purports to be an interesting discovery in physiologic chemistry is related of the work of Loeb and Morgan in "Progressive Medicine" for December, 1900. The former, it seems, observed some eight years ago, that concentrated sea water promoted segmentation of the fertilized eggs of the sea urchin. The latter then confirmed this fact, and learned that unfertilized eggs could be made to segment as far as the sixty-fourth cell stage by placing them in sea water, to which one and five-tenths per cent. of NaCl or three and five-tenths per cent. of $MgCl_2$ had been added, and then returning them to normal sea water. Loeb has since been able to develop the unfertilized eggs from this point to a healthy larval stage. When compared with the product of the fertilized egg the artificial result shows close resemblance and the significant question is raised, whether fertilization is a physio-chemic or a morphologic process. As it would be utterly absurd to explain the transmission of hereditary qualities on the theory of a change in the inorganic composition of the sea water, the inference remains that the spermatozoon has a dual role—one of fertilization and another of transmission of hereditary qualities of the male.

RECENT PUBLICATIONS.

REVIEWS.

NORMAL HISTOLOGY.*

The author of this work characterizes it as an outline of histology. The student and reader will find, however, that it is sufficiently filled in and illustrated to more than please. The arrangement of the subject matter is made to conform to the author's well-defined methods of teaching and will be found to be eminently practical. The publishers have given this subject a better setting than it has often received.

* By Edward K. Dunham, M. D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. New (second) edition. In one very handsome octavo volume of 319 pages, with 244 illustrations. Cloth, $2.50, *net.* Lea Brothers & Company, Publishers, Philadelphia and New York.

CHEMISTRY AND PHYSICS.*

With the presentation of the medical aspects of chemistry and physics in outline we have no criticism. Such a brief has its uses in the teaching of any subject. Believing, however, that students should not be confined within the covers of so small a work, and, since the medical curriculum usually allows but one coursing over those topics, we would not advise the adoption of this book save as an epitome for review. As an outline of the subjects, with which it deals, however, it will serve as a fit companion to this valuable series.

*By Walton Martin, M. D., and William H. Rockwell, Junior, A. B., M. D., of the College of Physicians and Surgeons, New York. In one 12mo volume of 366 pages, with 137 illustrations. Cloth, $1.50, *net.* Flexible red leather, $2.00, *net.* Lea Brothers & Company., Philadelphia and New York.

HISTOLOGY AND PATHOLOGY.*

As, according to our view, a book should be regarded from the standpoint and intent of the author or authors, there is no occasion for criti cising this volume for its limited size and abridged contents. It is pu out as a pocket text-book of two subjects combined. As such it is jus what the beginning student of medicine needs and what many practi tioners will sincerely appreciate. The subject matter is methodically arranged and the style of both authors clear and pleasing. It is a worthy member of this series.

* By John B. Nichols, M. D., Demonstrator of Histology in the Medical Department of the Columbian University, and F. P. Vale, M. D.. Assistant in Pathology in the Medical Department of the University of Georgetown, Washington, District of Columbia. In one handsome 12mo volume of 452 pages, with 213 illustrations. Cloth, $1.75 *net.* Flexible red leather, $2.25 *net.* Lea Brothers & Company, Philadelphia and New York.

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

SOME REFLEX DISTURBANCES FROM DISTURBED PELVIC MECHANISM OR GENITAL DISLOCATION.

(I) INTIMATE CONNECTION OF SYMPATHETIC NERVE TO VISCERA.
(II) SYMPTOMS OF GENITAL DISLOCATION.
(II) REFLEXES OF DISLOCATED GENITALS ON THE STOMACH.

By BYRON ROBINSON, B. S., M. D., Chicago, Illinois.
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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

It may be well to make some practical observations on the important *sympathetic nerve.* It groups itself on each side of the vertebral column in the form of a lateral chain containing some twenty ganglia. The abdominal portion has its ganglia also connected by transverse cords passing in front of the vertebral column. The posterior sensory root of the spinal cord after leaving the sensory ganglion unites with the anterior motor root to form a single nerve-trunk which immediately divides into four branches, namely, (a) ramus dorsalis; (b) ramus ventralis; (b) ramus meninges; and (d) ramus visceralis. The branch which concerns us is the ramus communicans which consists of a branch from the spinal cord to the lateral chain of visceral ganglia and a branch from the ganglia to the meninges of the spinal cord. The ramus communicans then connects the spinal cord to the sympathetic nervous system. The lateral chain sends off branches to the thoracic, abdominal and pelvic viscera. The thoracic ganglia send off the four splanchnic nerves which unite in the ganglion, the celiacum or the abdominal brain, which also receives the tenth cranial nerve, the vagus. The paired ganglion, celiacum, plexus solaris or abdominal brain is the great central reorganizing power of the abdominal viscera. From the abdominal brain radiate the splenic plexus, the renal plexus, the gastric plexus, the ovarian plexus, the aortic plexus, the hypogastric plexus (to the genitals) and the superior mesenteric plexus. This makes a direct connection between the abdominal brain and all the abdominal viscera. The inferior mesenteric plexus supplies the rectum chiefly, but since it is connected with the superior mesenteric ganglion it is practically under its ruling. The hypogastric or genital plexus is strengthened by the addition of the second and third anterior branches of the sacral spinal nerves. The hypogastric or genital plexus forms secondary plexuses, as the uterovaginal, the hemorrhoidal and the vesicovaginal, showing how wonderfully and intimately connected and balanced are the genitals, rectum and bladder. The plan of the sympathetic nerve indicates that the genital disease can only exercise a conditional influence on the distant viscera through reflexes, because of the indirectly routed network of nerve connections and because the pathologic foci of the organs vary as well as the conditions of the constitutions. It is not a definite kind or form of dislocated genitals that produces functional disturbances through reflex neurosis in distant organs, but it is any or all kinds of dislocated genitals which become a locus minoris resistentiæ, a point of irritation that induces the reflex neurosis. When once the reflex neurosis has become established from the dislocated genitals, the recovery requires long and persistent treatment. Doubtless those women who acquire the reflex neurosis from dislocated genitals possess low powers of resistance and are predisposed or possess a neuropathic constitution.

The symptoms of genital dislocation are numerous and complicated and require close observation to understand. Gynecologic patients experience pain in the epigastrium which may refer to attacks of the gall-bladder or the stomach; but the patient calls them abdominal pain. Pain localized in the hypogastrium may refer to chronic colitis or cystitis, rather than to the genital organs. Again, severe genital disease, malignant or otherwise, after the menopause, may run a course without symptoms. Excessive generalization is unsafe in gynecology. We will here note some observations on the relation of symptoms to certain genital dislocations. Dysmenorrhea prevails in myometritis, especially in anteflexion. In myometritis the pain arises from trauma of the nerve periphery during congestion and when the uterus contracts to attempt to expel the engorged blood, the colicky pain occurs. Dysmenorrhea rests chiefly on myometritis. Flexion is only myometritis fixed or set in a curve. In anteflexion when the uterus is curved on its anterior surface and thus fixed, the ligamenta sacrouterina are shortened from cicatricial inflammation and the cervix is displaced backward. In the treatment of anteflexion, which is not only myometritis but also localized pelvic peritonitis and cellulitis, the success will rest on securing normal circulation by the douche, the tampon, massage and constitutional remedies. Sterility results chiefly from dislocation of the genitals or from mechanical causes. The gonococcus, the arch destroyer of genital functions, passes over the genital mucosa and finally into the peritoneum, causing plastic peritonitis with resulting adhesions and dislocations. However, the reason the gonococcus is so fruitful of disease is that it traumatizes tissue, epithelia, and thus prepares the way for all other germs as the staphylococcus, streptococcus, tubercular bacillus and colon bacillus. The inflammatory process dislocates permanently the fimbriated end of the oviduct from the ovary making it impossible to transport ova to the uterus. Sterility also may result from thick-walled myometritis because the fetus is unable to expand it and premature expulsion occurs. Every gynecologist knows from daily practice that severely dislocated genitals become the source of innumerable reflexes and psychoses. Menorrhagia is closely associated with retroversions. Congestion in retroversion favors endometritis, hence hemorrhage occurs with slight provocation. The menstruation becomes more profuse and continues longer. Reposition favors immediate recovery. The endometrium, especially in a state of inflammation, is an excellent ground for the growth of microbes, and this serves as a focal source for continuous and progressive distribution of successive invasions of inflammatory processes, which in turn attack the myometrium and myosalpinx, the peritoneum and pelvic subserosum. Subsequent cicatricial contractions of the attacked structures and dislocations strangulate vessels and traumatize nerve periphery inducing trains of reflexes. The vascular strangulation due to parametritis, perimetritis, peritonitis, pelvic cellulitis and myometritis produces a high grade of venous congestion, which manifests itself occasionally in menorrhagia. In venous congestion of a weakly contracting uterus, hemorrhagia is liable to be severe. For bladder tenesmus and colicky bladder pain subsequent to evacuation, dislocation of the pelvic organs answers the chief role. Retrodeviations of the uterus, dragging of the uterovesical ligaments as well as retractions of the bladder from parametritis lateralis (both peritoneal and cellular types) traumatize the nerves and compromise the vessels producing anemia here and hyperanemia there. The chief dragging on the cervix may be produced by inflammation and contraction of the ligamentum latum coli. The cervix and the neck of the bladder are intimately associated through nerve connection and any dislocation of the one from the other not only induces severe disturbances in either the uterus (contraction) or bladder (contraction), but also a train of reflexes affecting the abdominal viscera, especially the stomach, kidneys and liver. The most manifest example of bladder disturbances through dragging or pressure is the retroflexed, fixed, myometritic uterus. The dislocated bladder or organ associated with it (uterus) incites a congestion and consequent hyperemic condition which may foster pathogenic microbes. Remove the dislocating tissue by douche, tampon and massage.

Bowel disturbances may arise when any segment is so dislocated by adhesions as to interfere with its peristalsis, circulation, secretion, or sensation. Periproctitis hinders peristalsis and produces pain and congestion. Pelvic peritonitis or pelvic cellulitis may so drag on the rectum as to produce disturbance. The retrodeviated fundus may unduly press on the rectum. Peritoneal bands may fix the middle of the flexura sigmoidæ to the genitals checking peristalsis, altering secretion and producing pain. Doctor Lucy Waite and I performed laparotomy for such condition, with permanent relief. Parametritis, posterior and inferior, may severely drag on the rectum. The adhesions of the tractus intestinalis influence the genitals as to circulation and vice versa.

The intimate relation of the stomach to the genitals is a striking feature in dissection of the sympathetic nerve. This short paragraph will be devoted to the reflex neuroses of the stomach as results of genital disease (dislocation). The first notice of the physiologic relations of the genitals and the stomach is chiefly during menstruation and in pregnancy. Even the laity are fully familiar with it. Pathologically similar reflex neuroses are set afoot by dislocated genitals. Descensus, dragging, insults, pulling and pressing on the genital and cicatricial contraction tell their own manifestale on the stomach. Besides the reflex neuroses in the stomach from the genital disease, through the sympathetic nerve, there is also the vagus for which to account. The greater part of the right vagus goes directly to the abdominal brain. The left aids more in forming the anterior and posterior gastric plexuses. Thus the diseased (dislocated) genitals are directly connected with the abdominal brain by the hypogastric plexus and indirectly through the cerebral brain and vagus. Hence the diseased genitals can influence the stomach through two routes, namely, sympathetic and cerebrospinal. It is a daily observation to note nausea and vomiting among certain patients, through the cerebrum, by seeing a fly in their food, through certain smells, or by seeing decomposing substances. The reason that the stomach is so much influenced in reflex action by the cerebral brain breeds food for skeptics that gynecologic diseases do not influence the stomach to any great extent. On the other hand the reflex functional disturbances in the stomach, namely, altered motion, secretion and sensation are so frequently associated with the genitals that the gynecologist takes it for granted as a working therapeutic hypothesis. The diseased genitals accomplish their reflex neurosis on the stomach chiefly through vascular changes. For example, a reflex irritation sent from the genitals to the stomach congests the stomach and excites it to motion. The congestion also, according to its degree, produces excessive, deficient or disproportionate secretion, and besides, the continued disturbed circulation induces disordered sensation. However, the abnormal sensation of the stomach is perhaps anesthesia or hyperesthesia. Of course careful examination of the stomach for malignant disease, ulceration, gastroptosis or dilatation should be undertaken. A good example of the proof of the nerve connection of the genitals and stomach is that in fresh pelvic diseases the functional disturbances in the stomach rapidly follow the pelvic disease, similar to that of pregnancy. In our gynecologic clinic my assistant, DOCTOR JENNIE CLARK, frequently noted that a single irrigation of the stomach for diseased gentials would suffice for six to eight weeks. Among the many scores of women who came to my clinic during the past twelve years I scarcely ever found a woman with stomach disturbance who did not possess diseased genitals, carcinoma and gall-stones excepted. The diseased genitals can induce hyperacidity from reflex action passing up the hypogastric plexus to the abdominal brain, where the force is reorganized and sent to the stomach. The chief effect on the stomach of the reflexes from the diseased genitals is on the secretions, making them excessive, deficient, or disproportionate. The existence of reflex vomiting demonstrates that it is due to the exalted irritability of certain nerve tracts. So-called nervous dyspepsia is perhaps altered sensibility of the gastric mucosa (hyperesthesia). Atony of the stomach may arise from genital disease or from reflexes, as the continued reflexes cause disturbed circulation and deficient nourishment. Space forbids further discussion in this line. However, much that was said in regard to motion, sensation and secretion in the stomach in gynecologic cases applies equally well to the enteron and colon; also that the numerous women with visceral ptosis, hanging belly, are aided wonderfully by well-fitting abdominal binders. A certain nervous anxiety accompanies many women with diseased genitals. It is a kind of psychosis, but may rest on a physical basis. Perhaps some of it is accounted for by congestion in hyperesthetic areas. The congestion may arise in the endometrium or other viscera when the periphery of the nerves are exposed. Excessive coition or coitus interruptus may produce severe pelvic congestions and peripheral nerve disturbances. Asthma which is not of the toxic character may be of reflex origin from the diseased genitals. Tussis uterina is a recognized reflex neurosis from diseased genitals. Some suspect epilepsy to be a reflex neurosis from the sexual organs. Hysteroepilepsy is well grounded in the beliefs of many practitioners as reflex action from the genitals. Of all cases of so-called hysteroepilepsy which have come under my examination, I do not remember a single marked case which did not present palpably diseased genitals. Neurasthenia is a fatigue disease rarely diagnosed in woman because as soon as the nervous system has reached this stage of debility it rapidly passes into hysteria and psychosis, migraine and reflex. Neuralgias are of a motor character and hence are frequently results of reflexes from diseased genitals.

The general treatment of patients with genital dislocations must be long continued and systematic. First, the three great channels, tractus intestinalis, urinarius and perspiratorius must be drained continually in order to free the blood from waste-laden matter. The *skin* should be drained by a half-hour daily salt rub especially by the patient. The *kidneys* should be drained daily by a half pint of water every hour until two to three quarts are taken. The *bowels* should be drained daily (after breakfast): (1) By eating coarse food not concentrated, as graham bread, oatmeal, vegetables and meats. (2) By drinking on retiring small quantities of cathartics in large quantities of water. The best is a half to a teaspoonful of magnesium sulphate or two teaspoonfuls of Vichy. Magnesium sulphate is superior to all because it is a splended diuretic, especially when it goes through the body slowly as at night. (4) Exercise in open air, walking or wheeling. (4) A regular hour for evacuation should be established whence the head will do more for the bowel movements than medicine. With time all cathartics are avoided, and food, exercise and regular hour for evacuation regulates the function.

The local treatment must be systematic and persistent. The vaginal douche should be gradually increased in heat to the bearable point and in quantity to seven gallons, to each gallon of which should be added a handful of sodium chlorid and a half to one teaspoonful of alum. The patient should take the douche while lying on the back and two minutes should be required for each quart. The douche should be taken in the morning and a rest of three-quarters of an hour afterward should follow. For laboring women the douche should be omitted in the morning. The evening vaginal douche should be taken on retiring. The boroglycerin tampon (two drachms of boric acid and two ounces of glycerin) should be employed twice weekly, filling the vagina each time. It is well to leave it in all night. Both general and local treatment may require a long time to accomplish permanent or useful results. The majority of cases require six months to a year, after which women are frequently comfortable or sufficiently well to bear children. The future of medicine demands that physicians be able to accomplish more and more by nonsurgical methods. The universal rule is now to sacrifice only hopelessly diseased tissue. Sweeping removal of organs or tissue is a backward step in medicine.

DIABETES MELLITUS: A STUDY IN THERAPEUTICS.*

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In thinking of the achievements of the century just ended, it seems to me that future historians of medicine will characterize it as that of diagnostic and pathologic discovery. Not that these branches have reached their limits, for we cannot doubt that the future will reveal us facts that will compare with those we now know as the discoveries of Roentgen and Ramon y Cajal do with those of Priestly and Vesalius. But these anticipated discoveries will, it is safe to say, be confined largely to details, especially in instrumental and laboratory technic, while the advances of the nineteenth century, in clinical chemistry, in microscopy and in other lines, mark the century as did anatomic and physiologic discovery the seventeenth.

Of the twentieth century I shall not attempt prediction, except to say, that to me it seems certain to witness great and permanent advances in therapeutics that will stamp it as do diagnosis and pathology its predecessor—advances, that is, in the most important part of the physician's work, the relief of disease. But like other gains in civilization, this will not come as a sudden change. Many signs can now be seen, though obscured by the clouds of polypharmacy, of crude and often fantastic animal therapy, and the tinkering and patching with remedies for symptoms and symptoms of symptoms left over from an eager and credulous age.

In our journals, oftener the mirrors of rather than the guides to practice, among pages filled with the formulæ of a receding epoch, one can see indubitable evidences of a better time. Here, as in the more independent text-books, we can note the deepening and broadening conviction that our therapeutics, even with the most efficient specific remedies dreamed of in bacteriologic laboratories, must be directed to the patient and not to the disease; that the conditions of the body requiring treatment can be made out only by complete examinations of that body and its products, by careful and often laborious investigations, and that the means of relieving the abnormalities can be chosen only by the critical examination of numerous and varied data, derived partly from the laboratory, partly from the records of the past, but all tested in the crucible of judicious clinical experience.

Another promising sign of the times is the wider use of nonmedicinal remedies, such as diet, exercise, baths, light, climate, et cetera—things used as long as medicine has been practiced, but never yet given their definite places in therapeutics, and therefore made the favorite instruments of charlatans; widely used very often, but never thoroughly legitimatized.

Like all other wisdom, that of therapeutics must begin with the confession "I know I know nothing." In this we see the difference between the practice of the expert and that of the empiric. Medical practice should be permeated by the experimental spirit, not the experiment imagined by the caustic philosopher who saw his physician pouring drugs of which he knew little into a body of which he knew less, but experiments the bases of which are as soundly fixed as possible, and whose outcome can be critically examined. Not waiting on this, but hand in hand with it, must go the search into the nature and course of disease.

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* Read before the Kalamazoo Academy of Medicine, January 11, 1901.

Diabetes mellitus seems to me to be a striking example of the gradual change in methods of therapeutics. At a time not very remote it was a favorite field for the exploitation of new remedies. These were recommended on the ground of a limited number of cases treated, without differentiation, and often without much care for a time-limit in the vaunted cures. The result was a more or less widespread trial, also in cases imperfectly examined, and likely to include some severe ones. Disappointment naturally followed, and the remedy was relegated to oblivion although a critical study might have discovered some element of value. This tendency is of course not yet outgrown. In a recent journal I find the report of a case showing a decrease of sugar in per cent. and total excretion, under the use of a drug much advertised in periodic literature. The facts, that the patient was seventy-one years old, that is, at an age when diabetes is often mild, and was on strict antidiabetic diet, lead one skeptically inclined to think that the result would have been the same if the patient's gold and the pharmacist's had not changed hands. In another recent contribution I find from seven to thirteen drugs given at one time. But such examples I think we may look on as exceptional. At any rate within the last three or four years, a suggestive literature has apppeared regarding diabetes. Following the investigation of physiologists and clinical pathologists, and the discovery of a score of forms of symptomatic glycosuria, more careful observation of cases has been the rule; greater care in the study of dietetic treatment has been practiced. In newer reports we see little of formulæ, but much of special diagnosis; little of drugs, but much of a treatment that, while benefiting the patient, leaves his case in a condition to be more readily followed than when complicated by drug intoxications. The most notable articles on the subject are familiar to all of you, and many, no doubt, have derived both pleasure and profit from the recent larger treatises of WILLIAMSON, VON NOORDEN, NAUNYN and others, so that in the following I shall limit myself to some special points that illustrate my ideas of the modern plan of treating cases of diabetes.

One of the most important practical advances depends on the clearer recognition of different grades of severity of the disease. While cases difficult or impossible to classify are not rarely seen, and while experiments on pancreatic diabetes show no line between mild and severe, we can separate many, as first seen, into two classes—a mild form and a severe one, or to use the expressive terms of PAVY, a simple and a combined form. Some mild cases represent the early stages of the other form, but if taken in time can be prevented from going farther. Others are essentially chronic with a milder course than the other, but subject the patient to more or less discomfort and some risk, while at the same time they offer notable opportunities for skillful treatment. Failure to recognize different types of diabetes lies at the bottom of most of the optimistic drug treatment, as well as much of the pessimistic prognosis observed in practice. I recall the case of a physician in the fifties, who had been given a rather vague prognosis, advice as to strict diet, and some drug treatment. He was much depressed, and had apparently given up the race. At my first examination, wishing to cheer him up, I remarked that he had many evidences of a mild case and was probably good for twenty years of active work. He then remembered that his father had developed diabetes at sixty, and had lived with it twenty years. Further investigation proved the case to be very mild. The patient resumed his work and for three years has been able to keep his weight up and his sugar excretion down with very little restriction of diet.

As regards pathology I shall say little. We are still ignorant of the nature of diabetes, although this disease has stimulated a most extensive investigation, and given occasion for some of the most brilliant discoveries in experimental medicine, such as the result of puncture of the floor of the fourth ventricle and the existence of glycogen by CLAUD BERNARD, and the relation of the pancreas to diabetes by VON MERING and MINKOWSKI. It is, however, certain that in diabetes the trouble is not merely one of sugar consumption, as was once thought, but concerns carbohydrate metabolism in many ways, including the complicated and not yet thoroughly understood relations of carbohydrates with both proteids and fats. Though the final results will no doubt come from the laboratory, it must not be forgotten that careful clinical observation can still furnish information of great value.

It is in the field of diagnosis that diabetes furnishes some of the most striking evidences of the advance in medical method. The symptoms in a severe case are as a rule so clear that a qualitative sugar test seems a work of supererogation, but in all cases the routine test for glucose is the essential thing. The test should be made on the urine of each and every patient coming under observation and of every applicant for life insurance, and repeated negative examinations must not be allowed to blunt the interest of the observer. Not long since I heard a teacher of physiologic chemistry, in an address before a medical society, recommend that sugar tests be made in all cases presenting suspicious symptoms. And yet, even if we include under the term used all the rarer phenomena such as only a faultless memory could retain, the advice was not as good as that I have given. Failing this, we must not be surprised to find a wide-awake ophthalmologist, dermatologist or dentist sending back our patients with an unmistakable sugar reaction.

As to the tests themselves, I think failure to find pathologic quantities of glucose in urine is due more to unfamiliarity with the reactions than to faults in the methods. I, therefore, have long advised students to learn all the ins and outs of a few of the best tests, by working with all kinds of specimens, rather than to make temporary trials with more refined but less practical methods.

Among the useful methods, the copper reduction tests, as represented by those of FEHLING and TROMMER, do not need to give as much trouble as they actually do. They have many sources of error, but I am of the opinion that on the whole the majority of alleged errors depend on careless manipulation. Like many others, I occasionally see men who have been refused life insurance because of a seemingly positive test for sugar, the reduction having been obtained only after prolonged boiling of the mixed urine and reagent, and the precipitate being anyting but characteristic. Here, as in all doubtful clinical matters, a control test is indicated.

For such a control I prefer the phenyl-hydrazin test, and believe that unsatisfactory results with it are due to failure to get a good method, the directions in many text-books being unduly complicated. I have long used with satisfaction a method I learned in ULTZMANN'S poliklinik, and find that WILLIAMSON also recommends it. It is carried out by putting phenyl-hydrazin hydrochlorate and sodium acetate into a test-tube to the height of one-half centimeter each, filling the tube one-third with the urine to be tested, boiling to dissolve the reagents and repeating the boiling several times, then allowing the tube to stand fifteen minutes and examining the sediment in the usual way.

As a further control, and as a convenient and for clinical purposes sufficiently accurate quantitative test, I next use the fermentation method. Instead of using tubes for the collection of the carbon dioxid, I depend on the difference in the specific gravity of the urine before and after fermentation. With care in the manipulation I think this a more useful way than with the tubes. I use ordinary bottles of a capacity of six or eight ounces. In one, which must be thoroughly sterilized by boiling, is put a control specimen. In another is placed the urine, taken from the same lot as the first, with some compressed yeast. The bottles are closed with notched corks and kept side by side in a warm place, as the top of an incubator or near a stove or radiator. If there is much sugar present, turbidity and foam will soon appear. After twenty-four hours the fermented urine is tested for glucose, and if none is present the difference of specific gravity is noted, both specimens being at the same temperature. A tested urinometer is usually sufficient for the purpose, but for greater accuracy the apparatus of LOHNSTEIN can he used. In the hands of most people this method will give more accurate results than those requiring titration, though the latter will be used by those having the requisite familiarity with them, while the polariscope will also be used, though not to the exclusion of the others, by those having access to that instrument. Used alone, the polariscope may lead us far astray from the actual sugar-content if the urine at the same time contains levorotatory substances, such as oxybutyric acid.

But the determination of the presence of sugar, and its amount per day—the amount per centum being of no value unless the daily amount excreted is also known—is only the beginning in the study of a case of diabetes. We have next to learn further details of the carbohydrate metabolism by ascertaining the relation of glucose excreted to carbohydrate ingested, or, in severe cases, the existence and amount of glucose in the urine independent of carbohydrate food. For this we require quantitative determinations carried on for a number of days with known amounts of foods of various kinds. Without such determinations there can be no rational treatment and no accurate prognosis. The actual procedure varies according to the previous history and the amount of sugar in the first twenty-four hours. With patients who are taking mixed diet, and who have not more than one hundred grams of sugar in the urine per day, it is sometimes worth while to continue the diet, the various constituents of which should be accurately weighed, and watch the excretion under those conditions for a few days before going on to the total exclusion of carbohydrates. In all cases the weight is to be noted, and the urine measured, the examinations to be made on samples representing the whole day, or in special cases the day and night separately. In general, it is more satisfactory to exclude carbohydrates after the first twenty-four hours, if the excretion of sugar does not exceed fifty grams. In a mild case the sugar will disappear within three days, though a longer time may be necessary. In cases with a larger amount of sugar, the carbohydrates should be lessened at such a rate that fifty to sixty grams of sugar equivalent are removed daily. If all the carbohydrate is being given in the form of bread, this will mean a diminution of one hundred grams, or three ounces, daily. In some cases with a large amount of sugar, but without symptoms of intoxication, the reduction can be made more rapidly. If sugar continues even in abstinence from all carbohydrate food, including milk, the period of abstinence must by no means be continued unless the patient is under constant observation. During the observation I think it a not unimportant detail to choose the diet from such articles as the patient is likely to obtain in future. The amount eaten must by no means be left to the judgment of the patient, or we may find that he either takes too little and goes into a state of inanition, or else consumes excessive amounts which affect his gastric or intestinal digestion unfavorably.

The question whether the case is mild or severe depends not on the amount of sugar habitually excreted on mixed diet, but rather on the continuance of glycosuria with strict diet, or still more when fasting. The importance of ascertaining this fact with the greatest accuracy is therefore obvious. Provided there are no other unfavorable symptoms, a case may be considered favorable when in the beginning of the treatment eighty per cent. of ingested carbohydrates are consumed, and if the patient can take two hundred grams daily without sugar appearing in the urine.

There is another feature in severe cases of diabetes that requires particular mention, namely, evidences of intoxication foreboding the dreaded diabetic coma, and presaged in the urine by the appearance there of such substances as acetone, diacetic acid and beta-oxybutyric acid, derived from faulty breakdown of body tissue. I do not intend to speak in detail of these bodies, interesting as they are, since that would lead us too far from our practical standpoint. Enough be it to remind you that in certain cases of diabetes we find some or all of the substances just named. After seeing in each one in turn the cause of diabetic coma, we have now been brought to the conclusion that something else must be concerned, either beta-amido-butyric acid, as STERNBERG and GRUBE show to be probable, or some hitherto undiscovered toxic body. Practically it is important to know that both diacetic acid and oxybutyric acid have rather close relations with the actual source of mischief. For the former we have a fairly useful clinical test in the ferric chlorid reaction of GERHARDT. For the latter, which seems more important, we have as yet no easy method suitable for ordinary purposes, but a number of investigators are working at the problem and with some indications of success. Pending further work it is important in all cases of diabetes to make the GERHARDT test, and to make this frequently in all cases on strict diet, or with signs of cachexia. Notwithstanding the unsatisfactory condition of our knowledge of the exact cause of diabetic intoxication, the treatment most worth trying is that based on the idea of an acid intoxication, namely, by administering alkalies. It may be said with truth, that although the results have not in all cases been good, yet in many the dose of alkali used was too small. With doses as large as two hundred grams of sodium bicarbonate daily, part by the mouth and part intravenously, the results in some apparently desperate cases have been good. I have introduced the matter of treatment of the intoxication at this time purposely, because it may be important to carry out symptomatic treatment in the beginning of the care of a diabetic. For this reason it seems well to add that the question of diet in the presence of toxic symptoms is not yet definitely settled. Most authorities agree that strict diet should not be pressed, but that on the other hand an excess of carbohydrate is to be avoided, and VON NOORDEN seems to be on safe ground when he allows unlimited milk, which is of benefit in reducing the painful thirst.

Determinations of the nitrogen assimilation, though useful in the study of diabetes, cannot be made with accuracy in general practice. Fortunately we can, by regular weighing of the patient, and by approximate weighing of the food eaten, keep that matter within safe limits.

That all the organs of the diabetic must be thoroughly investigated in the beginning and at frequent intervals should not be necessary to mention, were it not for the fact that we often see the examination begin and end with the sugar test. The alimentary canal, the heart and vessels, the lungs, liver, nervous system, eyes, skin and mucous membranes must be examined with special care, and always with the thought that the whole metabolism of the diabetic is different from that of the normal man.

In the prognosis of diabetes we must be guarded always. A case mild in the beginning may suddenly become severe, especially as the result of some hygienic error. Tuberculosis may at any time develop. On the other hand, we sometimes see cases apparently hopeless improve and long remain capable of a fair amount of work,

In mild cases with speedy disappearance of sugar from the urine the patient should be advised to have his carbohydrate assimilation tested at intervals of not more than six months. If a prolonged test cannot be made it is useful to examine the urine after unusual stress of eating or drinking.

An important element in the prognosis depends on the patient's ability to avoid nervous strains, and in general to regulate life and diet on proper lines.

Of treatment in the narrow sense I shall speak only in a general way. In the beginning, if there are no special symptoms requiring medication, the treatment should be purely dietetic, and this should be continued unless there are special reasons for drawing upon the resources of the pharmacist.

The diet should be arranged on the ground of carbohydrate tolerance, the object being to give as much carbohydrate food as can be taken without injurious effect. In mild cases there is usually no difficulty in arranging this. In severe ones it may be impossible to do more than bring the sugar down to a minimun still rather high. Give as little carbohydrate food as is compatible with absence of emaciation, and occasionally carry out strict diet for a few days, with careful examinations for acidosis. In these cases experiments with drugs are proper, provided the conditions are favorable.

It is often useful to ascertain the tolerance for other things besides bread, such as potatoes, other vegetables, cane sugar, beer, et cetera.

The dietary of the diabetic is fortunately much wider than formerly, and mild cases that can get along with one hundred grams of bread or its equivalent often find no discomfort. From occasional references to skim milk I believe it is not yet thoroughly understood that not only is full milk a better food for the diabetic, but that fat in all forms—cream, bacon, oil, butter, can be used with great advantage. Cheese is another article not used as much as it deserves. As for substitutes for flour, I never prescribe them. In the case of patients who have acquired a taste for gluten preparations I allow them in the limits of tolerance for the starch they contain. In order to satisfy the craving for bread it seems more rational to me to give this in the ordinary form when it can be safely done, and the same is true of potatoes. A good rule, before prohibiting or ordering any food, is to ascertain the amount of carbohydrate it contains in the portion to be used.

Those who have not yet tried the plan I have attempted to outline, of treating diabetic patients by complete examinations, gaining their interest and confidence, making clear the importance of diet and putting drugs in the background, will find it not without its advantages.

A BASIS FOR THE STUDY OF INSANITY.*

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IN order that we may acquire a definite knowledge in the study of any subject, and insanity in particular, we must endeavor to agree upon the definition of the terms used. Without unanimity in this respect, confusion will most certainly result. When particular terms are used in a loose or careless manner, ideas are improperly conveyed, and useless argument is provoked. This is more particularly true when a word is used as a synonym of another, when the term employed will not, properly speaking, admit of such usage. I shall therefore endeavor in the course of this paper, to use technical terms in their more restrictive sense, as far as possible.

Were I to criticize the method of teaching insanity to the student, pursued in our colleges, I would say that our teachers and text-book writers begin at the wrong end, in so far as they start out with mania, melancholia, et cetera, a practice precisely similar to a teacher of music, who would assign one of Wagner's operas as a first lesson to a beginner. These cannot be comprehended until a long preparatory course has been completed.

In order that we may outline a basis from which to begin the study of this intricately difficult subject, let us first understand what we mean by the term insanity. After considerable thought and critical study, I have come to regard insanity as *a disease of the mind, characterized by a disturbance of, or a departure from the normal activity of one or more faculties of the mind, resulting in irrational conduct or speech, and due to discordant relationship having existed between the conscious ego and its environment.*

By the term disease, I mean the antithesis of ease: that is, dis-ease, a state of unrest, a result of an antecedent cause. It may apply to either the physical, mental or moral in man. It is a misuse of the word disease to restrict its use to functional or organic disturbance of the physical body of man. Because the mind is not a tangible object, some have argued and insist, that there cannot be a disease of the mind. This is due to a misconception of the true application of the word disease.

By the term *mind*, I mean *the aggregate of those several faculties by the cultivation of which, the ego or soul grows or evolves from a lower to a higher state of being. These faculties are not things, but processes, and as such they occur in time only, not in space.* This definition of mind is thoroughly in accord with our highest conception of what constitutes an education. While our present educators profess to cultivate *all* the mental faculties, they sadly fail in the vast majority of instances, and if we may judge the present system by its fruits, our youth are being taught that success in life consists more in *having*, than in *being*. It is not what a man *has*, but what he *is*, that reveals the degree of his evolution from savagery to civilization, and from vice to virtue. What is the elevating force? Education; not cramming the memory alone, but cultivation of *all* the mental faculties.

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*Read before the DETROIT MEDICAL SOCIETY.

By the term ego, I mean the soul. These are synonyms, the one of Latin, the other of Anglo-Saxon derivation. It may be defined as *the aggregate of those attributes of character which are known to exist only as they are made manifest by means of the physical body.* This—the soul—is the real man, the metaphysical or spiritual, as distinguished from the physical or material, the body. This distinction is in accord with PROFESSOR LADD's definition of metaphysics: "*the science of real, as distinguished from phenomenal being.* According as this conscious entity, the soul, has evolved little or much, we say of the individual he is an unjust or a just man, a hateful or a loving man, a foolish or a wise man, a bad or a good man," et cetera. These modifying antithetical qualities are, as we say, attributes of the soul. But since we regard the soul as a metaphysical subject, not a physical object, it cannot therefore be demonstrated to our senses, hence how do we know there is a soul? Because, by means of the living physical body its several attributes are made manifest. If these were nonexistent, they could not be made manifest. Manifestation is of itself positive proof of the existence of the soul. But, you say, granted that such mental faculties and moral attributes are made manifest, we regard these as the function of certain cortical cells in the so-called, intellectual area of the brain. Right here is where I radically differ from you, who are believers in the *materialistic* school of philosophy, as opposed to the spiritualistic school. The materialists or monists teach that mind is a function of matter, that is, brain. They regard a healthy or normal brain cortex as an essential requisite, incident to normal mentality, and that a diseased mind implies a diseased brain cortex in every instance.

The spiritualists or dualists teach that mind manifests *by* and *through* the brain, but is *not* of the brain; that mind may be diseased independent of disease of the brain, or even have insanity with or without a perfectly normal brain, but they insist that for the purpose of manifestation of the mind and soul, a healthy brain and nervous system are absolutely necessary. They regard mind, as a psychologic study, not a physiologic study, or as a metaphysic, not a physical study.

My definition of insanity of the mind and of the ego are in accordance with my acceptance of the dualistic conception or hypothesis. They are entirely of my own framing, and I submit them for your careful and earnest study and criticism. I do not believe the teachings of materialism, because they do not consistently account for, or explain many phenomena of nature as they are being unfolded to our consciousness.

I do believe in the hypothesis of spiritualism, not because anyone has demonstrated it to me to be true, but because it accounts for noumena and phenomena, consistently with the facts as we see them in everyday life. There are many phenomena observed, which are to my mind inexplicable according to the monistic hypothesis, and yet when viewed from the dualistic standpoint become entirely comprehensible. For instance, if you accept as true, the theory that mind and soul are synonymous, and that mind is a function of the brain, as monists do, how do you account for dreams; for hypnotism; mathematical and musical prodigies; the various criminal tendencies on the part of many persons; or those who incline to vice, while others incline to virtue; intuition; instinct; the various emotional states, improperly called nervousness, such as anger, grief, fear, pity and many others; or how account for the personality of a LINCOLN, a WASHINGTON, a NAPOLEON, a SHAKESPEARE, a WAGNER, or a BUDDHA, as distinguished from the millions of commonplace individuals who compose the vast majority of our population? Furthermore, the limitations of the operation of heredity, as a natural law, cannot be reasonably comprehended or explained, when the materialists' concept of the relation of mind to matter is accepted as true. Heredity as usually understood is a denial of the truths which evolution is unfolding for us, while when properly understood they harmonize with one another, as all natural laws must of necessity. All these, however, can be satisfactorily explained or accounted for without any confusion or contradiction if regarded from the dualists' standpoint.

When a theory or hypothesis accounts for, or explains the phenomena in every detail, we accept it as true; when it will not so account for facts observed, we must discard the hypothesis, or change it to conform to the necessities of the facts observed. A happy illustration of this idea may be found in the history of the conflict between the heliocentric and geocentric hypothesis of the universe as advanced by PYTHAGORAS and PTOLEMY respectively. Each of these had its followers for centuries, and should we of today even, judge by the evidence of our senses, we would be obliged to accept the long since rejected Ptolemaic theory, instead of the more rational, though illusory to the sense of sight, Pythagorean theory, which accounts for all planetary phenomena in every detail. This proves conclusively that we must not, in all things, be guided by the evidence of our senses. So with regard to the two schools of philosophy relative to the relation of mind and brain, were we to be guided entirely by the evidence of our senses, we would accept the monistic: that mind is a function of matter, that is, brain; but since there are many facts unaccounted for, or remain inexplicable by this theory, I, at least, am forced to accept the other as the more rational.

Ever since the seventeenth century, and more particularly since the time of TUKE and PINEL a century ago, the materialists, so-called, have been in the ascendant so far as the study of psychiatry is concerned. This is likewise true as to psychology. Our lexicographers speak of old and new psychology. This distinction as between old and new is, so far as I may judge, due to the influence of materialism upon the mind of the writer or teacher. Originally psychology was regarded as essentially that branch of metaphysics which makes inquiry into the human soul. Now, however, mind and soul are usually regarded as synonymous terms, and in the Standard Dictionary the word brain is also given as a synonym, a manifestly improper usage. In fact it is now quite difficult to distinguish between psychology and physiology as the former is being taught. Assuming that psychology is the science which deals with the study of mind, and further that the mind is a function of the brain cortex, we are brought into confusion as between it and physiology, the science which treats of the uses or functions of the various organs of the body including the brain. According to this we are forced to conclude, either that psychology is a branch of physiology or that it is a study in physiology to inquire into the uses and functions of all organs of the body, except the cortex of the brain. If this be true, why do you not remodel your definition of physiology to suit the circumstances, or leave psychology alone, as it was originally, a branch of metaphysics?

I believe it was DuPrel who advanced the dual theory of mind—the objective and subjective—as designated by Thomson Jay Hudson, who in his "Law of Psychic Phenomena" based upon this theory, regards the subjective mind and soul as identical.

Now I believe you will admit with me that, regarding a certain process as a function of a certain organ, physical destruction of the organ results in the immediate cessation of its function. Then if mind and soul are synonymous, and mind be a function of the brain cortex, as the materialists contend, the destruction of the brain cortex brought about by the change we call death, would necessarily end the career of the soul. Yet you profess to believe in the teachings of Christianity, and give liberally of your material substance for its propagation, one of the essential tenets of which is immortality of the soul. Rob Christianity of the doctrine of immortality, or the continuous existence of the soul independent of the body, and there is nothing of Christianity left, and yet if you regard mind and soul as nothing but a function of the brain cortex, you cannot consistently believe in Christianity. Your science and your religion do not harmonize in this respect, and since a conflict exists, which, think you, must give way, in order that all your opinions concerning man, his origin, nature, and destiny, may logically harmonize one with another? I assure you that which you call science, based upon the unproven theory or assumption that mind is a function of brain, is not science at all. It is not knowledge; it is only belief. Science is knowledge. This will necessarily give way, when you come to study man, not man's body alone, as physicians are in the habit of doing.

A few months ago I read a paper before one of our medical societies on a similar topic to the one chosen now, in the discussion of which one of our prominent alienists took occasion to say that "As physicians we have nothing to do with the soul." Now, so long as a physician confines himself to the treatment of physical ailments only, I agree with him; but just as soon as he attempts to deal with mental ailments, in the role of an alienist, I insist that he must take the soul into consideration, if he may fully comprehend the nature of the maladies with which he is dealing. Of course, if you locate consciousness somewhere in the brain (I have been told recently that Nothlonagel claims he has located it in the optic thalamus), in some way intimately related to the various sensory centers, there would then be no necessity for those processes which, taken together, we call mind, in the economy of man. But the fact remains true, that we have not only our various senses, sight, hearing, taste, smell, and touch, but a series of mental faculties as well, all of which are processes incident to consciousness. Furthermore, were it possible to locate objectively a center for that which we term consciousness, it would most effectually obliterate every vestige of occultism or metaphysics ever yet advanced. The difficulty lies in the effort to so locate a center for consciousness in the brain. I maintain there can be no center for consciousness in the material brain, but that the soul alone is conscious, and that is why we say that the mental faculties (not senses) are processes incident to consciousness, and occur in time only, not in space.

Another point to which I would refer, that to me seems absurd, is the tendency nowadays, on the part of some teachers of psychiatry, to speak of the results obtained in the "*psychologic*" laboratory. Laboratory instruction is now very popular, and very properly so, but I humbly confess my inability to comprehend what a "*psychologic*" laboratory is. Wherein does it differ from a physiologic or pathologic laboratory? Have these gentlemen, DOCTOR PETERSON, of New York, for instance, been able to place a mind or a soul upon a table for analytic demonstration? To subject the brain to such an examination is quite proper, and necessary to determine the presence or absence of organic disease in this part of the nervous system; but for one to expect thereby to determine whether the mental faculties were deranged or not, a condition which could be studied or determined only during the lifetime of the body—for without a body manifestation is impossible—is to my mind the height of folly. Yet this is precisely what our state pathologist, DOCTOR T. H. KLINGMANN, was doing two years ago, when he was making "chemic and microscopic analyses of the brain matter of insane persons, trying to see what changes in brain substance accompany different forms of insanity." Do you suppose he has seen, or ever will see, what he was looking for? No, neither will anyone else.

Now you must not infer from my criticism of this practice that I deny the possibility of organic brain disease in the insane. Not so, I am confident that the brain of insane persons may be either healthy or diseased, just as occurs among the sane, or mentally sound persons; but should the brain of an insane person, on examination, postmortem, reveal changes considered abnormal, it would not follow that the insanity was due to the brain lesion. It would mean that this person suffered from both mental and organic brain disease, paretic dementia, so-called. Do we not find many cases in which postmortem examination of the brain reveals evidence of brain disease, and yet antemortem the person was considered perfectly sane (multiple disseminated sclerosis), and also the reverse, that there are found on postmortem examination many cases of normal brain, and yet antemortem the person was manifestly insane (acute mania)? Organic disease in the cortex may interfere with the senses, or with voluntary control over motion, according to location of the lesion, but this is evidence of a physical disease only, not a mental. Insanity is a disease of the mind involving either perception, or ideation, or memory, or judgment, or reason, or volition, or certain combinations of these various faculties; and must be distinguished from a physical disorder which involves either the afferent or efferent nerves or their cortical centers. If insanity were a diseased state of the senses alone, that is of either sight, hearing, taste, smell, or touch, or of the efferent nervous apparatus, I could understand why organic brain disease was necessary for its production; but it is regarded as a disorder of mental faculties, not of the senses, and just as we must distinguish between these—our physical senses and efferent control—and the mental faculties, namely, perception, association, ideation, memory, reason, et cetera, so must we look to other causes than organic disease of the sensory or motor nervous apparatus for the phenomena of insanity.

The fact that a person suffers from so-called illusions of sight or hearing does not mean that the optical or auditory apparatus, including the nerves and centers in the cortex, is diseased; but it does mean that the mental faculty of perception is disturbed from its normal activity. There is a wide distinction to be made between blindness or deafness, and illusions. Or again, the fact that a person suffers from delusions of grandeur, or persecution, or unseen agency, does not imply that some, as yet, undetermined center in the brain cortex is abnormal, but it does imply that the mental faculty of ideation is involved or disturbed from its normal activity. Or again, the vacant stare, the apathetic countenance, and the statue-like immobility of the dement, does not mean that the brain cortex or any other part of the nervous system is abnormal in any particular, but that the mental faculties, perception, reason, memory, volition, et cetera, are all inactive, or have been lost to the individual.

You ask, then, what are these faculties, perception, volition, ideation, of which we speak ? Of what do they consist, and whence do they come? This inquiry, were I now permitted to follow it up, would lead us beyond the possibilities of the limits of this essay. Suffice it to say here, that they are in no way to be regarded as functions of the brain, but are processes incident to the unfoldment of consciousness, and are essentially the result of the evolution of the soul. Inquiry regarding this subject will amply repay anyone who is interested in metaphysic study, but do not engage upon it expecting to make any progress therein by studying the anatomy and physiology of the brain.

Then how can this subject be of any moment to the physician? To him who generally studies the anatomy and physiology of the various organs, which together constitute the physical body of man, and their several diseased conditions, using such knowledge as best he may in the cure of the sick and the afflicted? Will a more intimate knowledge concerning these interesting phases of occult science assist the surgeon in the amputation of a limb, or in the removal of a suppurating appendix? No, it can be of no direct benefit to such as these, but to all of those who may be consulted as experts on insanity, or who are placed in charge of our various state institutions for the care of insane persons it is vitally essential. It is not sufficient merely for the examining physician to correctly determine whether a suspected person is sane or insane, but he should likewise be enabled to recognize the etiologic factors, which induced the unfortunate condition, when found, precisely as in dealing with certain bodily diseases, cholera or typhoid fever for instance. Physicians of fifty years ago or more correctly diagnosed these conditions, but were entirely unable to prevent their ravages, when once an outbreak or an epidemic was started. Not until the communicability of these diseases was known to be due to a living microorganism introduced into the healthy body by food or otherwise, were physicians enabled to combat such maladies successfully, as is being done today. This is due to definite knowledge having been acquired concerning the nature of the germ, and its effect upon the tissues of the body, when ingress has been effected, and was made possible by the study of bacteriology and sanitary science. Not that I would hint by this analogy that insanity is communicable, but we should know positively, if possible, and I believe it is possible, just what change has been wrought in the sane man of a few months ago, that now we consider him insane.

Physicians are repeatedly asked, what is the cause of insanity, and could it, in a given case, have been averted ? Should we consult our text-books on the subject, we would find heredity, syphilis, alcoholism, epilepsy, rheumatism, tuberculosis, and various other phenomena assigned as causes of insanity. Yet, in not a single instance has any author told us precisely how any one of these, or a combination of them, is productive of insanity. It is clear how many of these induce organic disease of the brain, but this does not necessarily imply mental impairment. Not but that many persons suffering from such diseases become insane, but I positively assert that the physical disease and the insanity are not related to one another as *cause* and *effect.* Furthermore, I assert that heredity has nothing whatever to do with its production, but time forbids indulgence in an extended argument in support of this contention.

A reference at this juncture to the definition of insanity I have given at the beginning of this essay, will show that I believe insanity, in every instance, to be due to discordant relationship having existed between the conscious ego and its environments. By environment I mean *every influence which has been brought to bear upon the ego, during the career of the body.* The development of our mental faculties is essentially dependent upon the opportunities which our environment affords. Our egoic environment includes not only all the surroundings with which our various senses, sight, hearing, taste, smell and touch bring us in contact, but our physical bodies as well. Since mind is a product of environment, we must look to environment for the cause which will disturb the normal equilibrium existent between the several mental faculties in order to induce that state which we term insanity.

There can be no doubt that during the century which is just closing we have become immeasurably more humane in our treatment of the insane; but I fear that a historical review of the literature on the subject will show very little advance having been made, scientifically, by our materialistic psychiatrists. Much confusion and contradiction yet prevail, just because of blind adherence to the improved assumption of the materialists, who are still hoping against hope, that they may yet demonstrate an impossibility—that consciousness is situated in the brain, and that mind is a function of matter.

I have previously referred to the too little attention being devoted to the study of insanity in our medical colleges. This is not due to the occupant of the chair of mental diseases alone, but to the fact also, that the remainder of the college faculty who interest themselves in their own branches only, so far as teaching is concerned, are not conversant with the tremendous import of the study of psychiatry to the general practitioner, as well as to the alienist. They have an idea that one or two hours a week is all the time required for the student to acquire a sufficient knowledge of this subject. They reason thus no doubt, that so long as the patient is sane, he, of course, can be treated for his physical ailments by anyone inside the profession, but when he becomes insane he is sent to the asylum, there to be cared for by the specialist, and therefore there is no necessity for a general practitioner to interest himself in insanity. This is no doubt true, but it is an argument in behalf of ignorance, rather than of scientific knowledge. Our college faculties should not be so anxious to graduate the student, as the student is to be graduated. There is plenty of time for a young man to acquire more knowledge, if he so desires in any branch which awakens his interest, before his full time will be occupied in the practice of his profession. If he would acquire an intelligent acquaintance with insanity let me suggest as a basis or hypothesis from which to logically reason out an explanation for all psychic phenomena observed among those whom we regard as *sane,* as well as those whom we regard as *insane,* this fundamental proposition, that man is a soul and has a body, not as is usually understood and believed, that man is a body and has a soul. The soul (the metaphysical) is the real, while the body (the physical) is the phenomenal. A study of man includes both, the real and the phenomenal. Physicians, as such, usually study only the phenomenal, and leave out of their consideration the real, a grievous error indeed.

Let me plead, in conclusion, for a more careful investigation into these deeper lines of philosophic thought for a basis from which to deduce our conclusions as to the nature of this obscure malady, than has been customary on the part of students in more recent years. If in the presentation of this essay I have awakened an interest in this line of thought, or have provoked a profitable discussion, I shall be deeply gratified, and shall feel conscious that my effort has not been in vain.

497 TRUMBULL AVENUE.

A SYMPOSIUM ON ENDOCARDITIS.

ETIOLOGY AND PATHOLOGY.*

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IN opening this subject it is necessary to premise first, that in so far at least as the subject is presented from the standpoints of etiology and pathology, there is nothing new or startling to be advanced; and second, that the subject matter will be confined by all the gentlemen taking part in the symposium to intracardiac disease as distinct from extracardiac. In other words, there having been no discoveries along this line, during the past decade, the matter will be presented only as given by many standard authors (though in a concise form); and with the object of refreshment of memory, or of opening the way for criticism of theories or supposed facts.

The subject will, then, be discussed only with reference to disease of the endocardium, and in order to present a paper within the time-limit of ten or fifteen minutes, I shall confine myself to the earlier stages of endocardial disease and leave untouched the later when we get dilatation, et cetera.

Theoretically any part of the endocardium may be the seat of inflammatory change, but practically the endothelium of the valves is alone affected, so that valvulitis and endocarditis are considered by clinicians as synonymous terms. We subdivide the disease then into three forms: acute simple endocarditis, acute malignant or ulcerative endocarditis and chronic endocarditis.

The first form we meet clinically with greatest frequency after rheumatism; the second as a complication of pneumonia or puerperal fever; and the third in patients past forty-five years of age, who consult us for supposedly lung trouble as indicated to them by a cough, breathlessness, et cetera, but which the trained eye and ear alone singles out as chronic valvular heart disease. The first two forms, acute simple and acute ulcerative endocarditis, are met with *very rarely* as primary independent affections, but they almost invariably accompany, or are a sequence to, some infective process, and so have no scientific right to places as etiologic or pathologic entities. Following custom, however, we shall treat them as such; but before taking these up seriatim, let me interject here what is common knowledge, and yet what has never been to me satisfactorily explained; that is, the fact that disease of the heart in prenatal life affects the right side, while disease in postnatal life affects the left side of the organ.

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*Read before the DETROIT MEDICAL AND LIBRARY ASSOCIATION.

Etiology.—In simple endocarditis rheumatism seems to play the most important etiologic part, it being claimed that twenty per cent. of all cases are due to this cause. Almost any one of the infectious diseases, however, may be a predisposing factor. Scarlet fever ranks high as a cause, while diphtheria, pneumonia and typhoid fever are of only moderate importance. Chorea must not be forgotten as an etiologic factor of weight. Osler, who has made a study of this disease, states that there is no other disease in which postmortem endocarditis has been so frequently found. In this connection it were well to recall the fact that Sir Andrew Clark denominated chorea as "rheumatism of the brain," and that many observers have claimed to trace a close relationship between these two diseases. Some six years ago I myself presented a paper before this society bearing upon this subject, and reported several cases which seemed to prove the correctness of this contention.

In acute malignant or ulcerative endocarditis (our second form) neither rheumatism nor chorea seems to play a very important part. Chronic valvular defects seem to be the chief predisposing cause, with pneumonia next, and meningitis a good third. Gonorrhea, septicemia, erysipelas and a few other diseases are also contributing factors, though they operate but rarely.

In the third form, *chronic endocarditis*, we find a preexisting acute endocarditis, particularly the rheumatic form, to be the chief causative agent. Certain poisons such as alcohol, syphilis, and gout seem capable of originating the pathologic changes, while overindulgence in rich food and severe muscular overwork must also be considered as of etiologic value. This latter factor is believed to be the most important causative agent in cases of chronic valvular disease, occurring, as it not uncommonly does, in professional athletes, and laborers doing work demanding periodic strain of voluntary muscles and so of the aortic valves.

Pathology.—In the first form the principal pathologic lesions are the valvular vegetations which are of a warty or fungous appearance, and which appear on all the valves on their contact faces about one-twenty-fifth or one-twelfth inch from their margins, that is, at their points of closest contact. These consist practically of granulation tissue capped with fibrin. Microorganisms of various kinds are found entangled in the fibrillated fibrin, but their relation to the disease is as yet undetermined. After a time the vegetation is absorbed, and there is left only a slight nodular thickening of the valve, which may not, but usually does, impair slightly its competency. What is, however, of more importance is the fact that this sclerotic thickening predisposes to new attacks of valvular inflammation, which finally culminate in a chronic endocarditis with its direful results.

The second form, malignant endocarditis, has either vegetative, ulcerative or suppurative lesions. Thus we may find vegetations as in the simple form, but here they lead to necrosis. More frequently there is ulceration more or less severe. It may be so extensive and intense as to perforate the valve, the septum or the heart itself. In the suppurative form we have small abscesses at the base of the vegetations which may develop pyemic embolic abscesses in distant parts of the body. Bacteria are present in large numbers and of various forms. Fraenkel's bacillus of pneumonia, the staphylococcus pyogenes aureus, and the streptococcus pyogenes are among the most important of those which have been found.

The third form, that of chronic endocarditis, presents the following pathologic signs: In the early stage the edge of the valve is thickened and has some nodular outgrowths, which probably are the remains of the healed lesions in a previous acute attack. A more advanced stage shows curling up and retraction of the valve edge, the result of contraction of this hyperplastic tissue. Adhesions of these inflamed areas in the valves represent a further pathologic change, which may coexist with the contraction previously mentioned or may be present without it. Calcification of the valves and the tissues surrounding the orifices is not uncommon, while areas of atheroma are frequently found. Rupture of a leaflet of one of the valves due to strain is a rare but not unknown incident in this pathologic picture.

970 JEFFERSON AVENUE.

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SYMPTOMATOLOGY.*

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ACUTE ENDOCARDITIS.

Physical signs.—These are somewhat uncertain, hence the great difference of opinion as to the frequency with which the condition occurs in rheumatism. Inspection, palpation, and percussion fail, as a rule, to give any definite information and it is only when sufficient inflammatory changes are present to cause valvular incompetence that the condition can be recognized.

The mitral valve being more frequently and more severely involved than the aortic, incompetence is much more readily produced at the mitral than at the aortic orifice, hence a systolic murmur heard at the apex, which indicates mitral regurgitation, is the physical sign which is most frequently met with in these cases. This is not a positively settled question, however. Mitral regurgitation arising under these circumstances may be due either to organic changes in the valves, the result of the inflammation; to relative or muscular incompetence, the result of rheumatic myocarditis; to relative muscular incompetence, the result of muscular debility, induced by the febrile process, independently of the rheumatic myocarditis; or to relative or muscular incompetence, the result of anemia, which is always to a greater or less extent developed in the course of a case of acute rheumatism, and which may of course be present before the attack commenced. BRAMWELL, after a long analysis of the above proposition, concludes as follows:

(1) "That a systolic mitral murmur occurring in the early stages of a first attack of acute rheumatism, in a person free from previous valvular disease and not previously anemic, shows that there is a rheumatic affection of the heart.

(2) "That the mitral regurgitation in such cases may be due either to mechanical alterations in the valve segments, resulting from endocarditis, or to muscular incompetence, the result of a rheumatic affection of the muscles of the heart, or to a combination of the two conditions.

(3) "That although it is impossible in many cases to determine which of these conditions (valvulitis or muscular incompetence) is the

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* Read before the DETROIT MEDICAL AND LIBRARY ASSOCIATION.

exact cause of the regurgitation, the strong probability is that the endocardium is affected."

I would therefore regard a murmur of this description as very strong evidence of acute endocarditis.

(4) "That in exceptional cases the murmur, in the early stages, is due to anemia. In these cases there would probably be a history of well marked anemia; a basic systolic (pulmonary) murmur would also be present.

(5) "That a mitral systolic murmur originating in the later stages of acute rheumatism may be due to a rheumatic inflammation of the heart (endocarditis or myocarditis), anemia, or simple muscular relaxation such as is met with in all forms."

There are other physical signs, particularly in severe cases, that make the diagnosis still more certain. The aortic valve may become involved, generally due to extensive vegetation, a double aortic murmur is then present, and it is proof positive of serious organic disease.

A systolic aortic murmur may be due to anemia, but a diastolic murmur is always organic. Accentuation of the pulmonary second sound indicates changes in the right heart, such as dullness on percussion, due to rapid dilatation. Either pulmonary congestion or mechanical derangement of the systemic circulation, when due only to rheumatism, is the strongest possible evidence of extensive mitral regurgitation. Here we would have an endocarditis without doubt.

ULCERATIVE ENDOCARDITIS.

Symptoms.—These are usually slight, or even absent at first. Sometimes precordial distress is complained of, and sometimes even pain. Marked shortness of the breath independent of pulmonary cause, dropsy, extreme pallor of the countenance, great rapidity of the pulse with a diastolic aortic murmur, a systolic mitral murmur with accentuated pulmonary second sound and evidence of engorgement of the right heart are so prominent that, notwithstanding the presence of fever and other grave constitutional symptoms, which are characteristic of the typhoid or pyemic types of the affection, the attention of the observer is at once directed to the heart. The spleen is enlarged, and tender to the touch. Albuminous or bloody urine and tenderness over the loins may ensue due to embolic infarctions in the kidney; paralysis, delirium, convulsions, headache, and coma may follow embolic infarction of the cerebral blood-vessels. Here are generally present characteristic symptoms of the skin and subcutaneous cellular tissue, such as purpuric symptoms, or local swelling and tenderness. Pneumonia, pleurisy and empyema are common complications. The general and constitutional symptoms often obscure the cardiac symptoms. Secondary inflammations may follow in any or all of the other organs of the body due to embolic infarctions. The symptoms sometimes very closely resemble those of typhoid fever. This mistake in diagnosis is not uncommon. In the *typhoid type*, so-called, the fever runs very high, sometimes up to 106°, 107°, 108° Fahrenheit or higher. The symptoms of cardiac disease are not prominent, and may be altogether absent. The physical examination of the heart is not satisfactory. In some cases in which extensive cardiac lesions have been found after death, no murmur was detected during life. In the pyemic type the symptoms closely resemble those of absorption of poisonous materials from pus.

MITRAL INCOMPETENCE.

Symptoms,—This condition is due to mitral regurgitation owing to organic changes in the valve segments, in which the mitral lesion may be said to be the primary cause of all subsequent symptoms, and mitral regurgitation due to other conditions, such, for instance, as fatty degeneration and muscular relaxation of chlorosis and progressive pernicious anemia, in which the symptoms are, for the most part, due to the general condition, that is, the anemic condition. Associated lesions are very common. Usually mitral incompetence is due to an endocarditis. It may follow an acute or subacute attack of that disease, or it may be very slowly and gradually developed in a person who has previously enjoyed good health. In some cases the lesion is so slight and so perfectly compensated, that no symptoms are experienced by the patient although a permanent apex systolic murmur may have existed for a long time. The lesion may remain in this latent, inactive condition for years. In some cases it neither interferes with the comfort of the patient, nor shortens life. In the majority, however, there is noticed shortness of breath and an exertion, while dropsy and the other symptoms and signs of a progressive mitral lesion are ultimately developed, and lead to a fatal termination.

The first symptoms complained of are due to engorgement of the pulmonary vessels and slight cough. These symptoms gradually increase and become more exaggerated. Palpitation, intermittent action of the heart, or a sinking, "wanting" sensation in the pit of the epigastrium are sometimes also experienced. Derangement of the stomach and intestines are common complications. One of the most frequent is flatulence, which causes the stomach to crowd the heart and thus embarrass it. Blueness of the lips, ears, nose, et cetera, are present to greater or less extent, also enlargement of the veins of the cheeks and nose. At first the dropsy is observed about the ankles and only at night. As the case progresses it becomes permanent and gradually extends upward. Organic renal disease and cirrhosis of the liver cause much ascites. As the general dropsy increases there is further shortness of breath, until in some cases it amounts to orthopnea. Nutrition is seriously interfered with; the patient loses flesh; and the red blood corpuscles are diminished in number. The urine is scanty in amount and highly-colored, depositing a copious sediment of urates and often of albumen. The nervous centers are seriously deranged. Erythema, erysipelas, or even gangrene of the swollen parts is apt to occur. Spitting of blood, the result of pulmonary apoplexy, is of common occurrence, and, after a prolonged period of terrible suffering, death takes place.

When the mitral incompetence is due to muscular debility the symptoms are more complicated. In some cases the general symptoms entirely overshadow those due to the mitral lesion. The murmur is soft and faint and cannot be easily transmitted on account of the flabby walls of the heart, hence it is not well heard under the angle of the scapula and sometimes not at all there. When the ventricle contracts feebly the murmur is often not heard at all. The volume and tension of the pulse is diminished and pulsation is also more frequent. So long as the muscular fibers of the left auricle and left ventricle are healthy, the pulse remains regular, or the rhythm is only slightly altered. Hypertrophy, dilatation of the right ventricle, tricuspid incompetence and dilatation of the right auricle are the secondary alterations in the right heart, which may be produced by a mitral lesion. In hypertrophy of the right ventricle the area of cardiac dullness over the lower end of the sternum and adjacent costal cartilages is increased. The first sound of the right heart is long and strong, and the pulmonary second sound is loud. In dilatation of the right ventricle the conditions are the same, except that the sounds are feeble. In hypertrophy of the left ventricle the apex beat is displaced downward and outward, and the area of dullness is increased over the left ventricle. The impulse of the left heart is strong; the mitral is loud and well propagated; and the pulse is of fair volume, tension, and regularity. The same conditions exist in dilatation, excepting that the sound and the impulse are weak.

MITRAL STENOSIS.

Symptoms.—The compensation may remain perfect for a considerable time, sometimes for years, and it is only when the patient makes any extra exertion that he feels short of breath, or suffers from palpitation, and begins to suspect that there is something wrong with his heart. Pulmonary engorgement often causes complications in the lungs. After the failure of compensation the systemic venous circulation becomes seriously embarrassed. Dropsy and other symptoms described under the head of mitral regurgitation are then developed. Accidental symptoms, like the plugging of important arteries in various organs, may ensue. A presystolic murmur having its point of differential maximum intensity at the mitral area is, according to most authorities, pathognomonic of mitral stenosis and is, therefore, the most important sign of the disease. The murmur is usually rough and rolling, grinding or churning in character. It is almst exactly simulated, as **Balfour** points out, by the sounds which are prodnced when "the symbols Rrrb or Vōōt are vocalized." It occurs toward the end of the long pause, and ceases abruptly with the occurrence of the first sound. It is usually very localized, and is best heard at the left apex of the heart or at a point slightly within the left apex. It is propagated directly toward the apex, and, therefore, directly, as it were, into the stethoscope and the ear of the observer. This murmur is not always heard, especially if the constriction be slight, or the force of the blood current not strong. In such cases the valve is usually incompetent, and, during life, the case is characterized by the usual symptoms and physical signs of mitral regurgitation. In the later stages of the disease, when the left auricle is dilated and the wall weak, or if it should contain a thrombus, the blood current has not sufficient force to produce a murmur.

Many cases of extreme constriction of the mitral orifice have been found postmortem when no symptoms were observed during life. **Doctor Hilton Fagge** expresses the opinion that in the large majority of cases in which mitral stenosis is found after death, there is no record of the presence of a presystolic murmur during life.

AORTIC INCOMPETENCE.

Symptoms.—A diastolic murmur, having its point of differential maximum intensity at the base of the heart, or, in some cases, at the lower end of the sternum, heard at the aortic cartilage and propagated downward along the sternum or toward the base of the heart, is characteristic of aortic regurgitation. The murmur is usually soft and blowing. In some cases it is very faint, in others loud and rarely musical. A systolic aortic murmur, which is usually due to associated stenosis of the aortic orifice, but which may be caused by dilatation of the ascending thoracic aorta, or possibly by anemia, is frequently also present.

In some cases the second sound is completely replaced by the murmur; in others both the second sound and the murmur are audible. Occasionally the second sound, which is totally obscured at the base of the heart, can be heard in the carotid artery. The pulse is altered and rapid. This is due to overdistention of the arteries by the force of a hypertrophied left ventricle. It has been called the water-hammer pulse, or Corrigan's pulse. The jerking, visible and collapsing characters are usually made more prominent by raising the arm above the head. In a feeble heart, however, this would not follow. Capillary and venous pulse have often been observed in these cases.

AORTIC STENOSIS.

Symptoms.—The primary physical sign which results from aortic stenosis is a systolic murmur in the aortic area, which is propagated upward over the course of the aorta and into the great vessels of the neck. The murmur is usually loud and somewhat harsh in character, though sometimes musical. In other cases it is soft and faint. The second sound is usually faint and indistinct. In those cases in which the valve is incompetent as well as contracted, it is of course replaced by a diastolic murmur.

The left ventricle is hypertrophied and the apex beat, displaced downward and to the left, is weak and ill-defined. In typical cases the pulse is slower than normal. Its volume is diminished, but unlike the small pulse of mitral regurgitation it is of good strength, the artery being well filled during the ventricular diastole. As a rule it is quite regular.

TRICUSPID INCOMPETENCE.

Symptoms.—The primary physical signs indicative of tricuspid regurgitation are, a systolic murmur in the tricuspid area, and true venous pulsation in the neck.

The murmur is soft and blowing; its point of maximum differential intensity is the lower part of the sternum or the adjacent costal cartilage; and its direction of propagation is upwards and to the right. The radial pulse is small, weak, and very often irregular. In fact, it usually presents the characteristics which are present in advanced stages of mitral regurgitation.

TRICUSPID STENOSIS.

Symptoms.—In one or two cases which have been reported, a presystolic murmur in the tricuspid area has been present, and the condition has been diagnosed during life. In the great majority of cases, however, the condition has either not been recognized during life, or has been diagnosed as tricuspid regurgitation. The stenosis is seldom sufficiently great to cause a presystolic murmur, but a systolic murmur due to associated incompetence is very frequently present.

PULMONARY STENOSIS.

Symptoms.—In cases of acquired pulmonary stenosis the physical sign is a systolic murmur having its point of differential maximum intensity in the second left interspace, or at the junction of the third left costal cartilage with the sternum, and its direction of propagation upward and toward the left. The murmur is in some cases loud and harsh, in others soft and faint, and is not heard in the carotids. Fullness of, and in some cases pulsation in the superficial veins, the external jugulars, for example, together with more or less cyanosis is often observed. Other cases are congenital. The condition of pulmonary incompetence is so extremely rare that we will not consider its symptoms.

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DIAGNOSIS AND PROGNOSIS.*

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Acute Endocarditis.—The diagnosis of this condition without distinct localized symptoms is often difficult. The heart of every patient should be examined daily during the course of any of the acute infectious diseases, especially acute rheumatic fever. If rapidity or irregularity of the pulse, dyspnea and precardial distress be present even without a murmur, we may suspect a beginning endocarditis, especially if these symptoms supervene in the course of one of the infectious diseases. When a murmur is discovered, the time of its occurrence, its distribution, the accentuation of the second sound and the changes in the heart which follow will usually indicate endocarditis.

Malignant Endocarditis.—The diagnosis of this condition is often very difficult for the cardiac condition may be latent or overshadowed by severe complications. As a rule the onset is sudden, rigors are common, the temperature is irregular, the cardiac pain is severe, and sometimes there is oppression and shortness of breath.

Acute endocarditis may be differentiated by the absence of recurring chills and sweats. The temperature is more regular and as a rule not so high and the constitutional symptoms are not so severe. The Widal test, rose spots, and the more marked splenic enlargement and abdominal distension will differentiate typhoid fever. The blood examination and the general condition of the patient will exclude malarial fever.

Before taking up the diagnosis of the different valvular lesions there are a few points to which I would call your attention. **Gumprecht** has called particular attention to the fact that the dullness of the left ventricle can be better ascertained if the patient be on his hands and knees or the body be inclined forward when percussing.

In aortic lesions, to diagnosticate the presence or absence of the second sound, the stethoscope should be placed over the carotids in the neck. A physician should hesitate to diagnosticate a valvular lesion when a murmur is present unless the apex beat be displaced. "Murmurs may come and murmurs may go, but the apex beat has an enduring significance that must not be neglected."

The diagnosis of aortic stenosis can be made with a fair degree of certainty, if with a history of rheumatic fever, we find a rough vibratory or musical systolic murmur, with its maximum intensity in the second right intercostal space, transmitted upward to the right sternoclavicular articulation and audible over the carotids in the neck and occasionally over the thoracic aorta along the spine. It is lost over the right ventricle but is again heard, as a rule, at the apex. It is sometimes accompanied by a systolic thrill felt over the aortic area. Signs of some hypertrophy of the left ventricle are present; and a hard, slow pulse of moderate volume and fairly good tension may be distinguished, sphygmographic tracing of which gives a low wave and comparatively slow rise and fall of the limb of the curve. Anemia, roughness or rigidity of the valves or dilatation of the aorta above the valves with perhaps an atheromatous condition will produce a similar murmur; but in anemia the history, age and aspect of the patient, blood examination, absence of thrill, and hypertrophy of the left ventricle will differentiate. The other conditions mentioned generally appear after middle age and there is frequently a history of gout or renal disease with a very loud, accentuated aortic second sound.

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*Read before the Detroit Medical and Library Association.

Aortic incompetence is generally quite readily diagnosticated. In the majority of cases there is a soft long-drawn diastolic bruit with its maximum intensity in the right second intercostal space, which is transmitted toward the ensiform cartilage and left border of the sternum to the apex. It may replace the second sound. There is present a great increase in cardiac dullness and a wide and forcible area of cardiac impulse with the apex beat displaced downward and to the left; also throbbing carotids with the "water-hammer" or Corrigan pulse and a marked loss of time between the apex beat and the pulse at the wrist; also capillary pulsations. Syphilis and degenerative changes may cause aortic regurgitation. In the former we must depend upon the history of syphilis, the absence of history of rheumatic endocarditis and the comparatively small amount of cardiac hypertrophy. In the incompetence due to degenerative changes the pulse has not the typical collapsing character and there is not that marked loss of time between the apex beat and the pulse at the wrist. The second sound heard in the neck has the low pitch and ringing character indicative of aortic dilatation and high arterial tension. In mitral incompetence there is distinguished a systolic murmur which is loudest at the apex, wholly or partly obliterating the first sound. It is transmitted to the axilla and may be heard at the angle of the scapula. Accentuation of the pulmonic second sound and evidence of cardiac hypertrophy particularly the increase in the transverse diameter may also be found. The group of "accidental murmurs" can be differentiated by their sharp localization and the absence of cardiac hypertrophy and accentuation of the pulmonary second sound. A systolic tricuspid murmur is sometimes heard at the apex, but is lost immediately to the left of it. The cases in which the incompetence is relative and due to dilatation of the mitral ring cannot always be differentiated from lesions of the valves.

Mitral stenosis presents greater difficulties in diagnosis than any other of the valvular lesions. Early in the disease a rough vibratory presystolic murmur is heard over a limited area at or to the inner side of the apex beat and according to JANEWAY in about one-third of the cases posteriorly just below the angle of the scapula. The murmur runs up to and suddenly ends in the first sound which is usually short and sharp. The pulmonic second sound is accentuated, and presystolic thrill may usually be felt at the apex. As the lesion advances the first sound becomes more accentuated and the second sound is lost at the apex. At this time care must be exercised that the first sound is not taken for the second sound and the murmur for one of mitral regurgitation, replacing the first sound. In some cases this is difficult to determine and it is quite important as to prognosis. Finally the murmur and thrill disappear and all that is heard is the sharp first sound at the apex.

In tricuspid regurgitation there is a soft low systolic murmur with its maximum intensity at the lower sternum, usually audible outward toward the apex, with distension and pulsation of the veins in the neck and sometimes expansile pulsation of the liver.

Tricuspid stenosis is rarely if ever found as an isolated lesion but as a complication usually of mitral stenosis. A presystolic murmur, best heard at the root of the ensiform cartilage or to the right of it, and sometimes accompanied by a thrill, may be discerned; also a distension of the jugular veins with little or no pulsation.

Lesions of the pulmonary valves are rare.

In pulmonary stenosis there is a systolic murmur, heard best in third left interspace, and accompanied by a thrill, the pulmonary second sound being weak or obliterated.

In pulmonary insufficiency the murmur is heard over the same area. It is diastolic in time and is conducted downward.

Prognosis in heart disease is of special importance and must be based upon a careful study of the nature of the disease and the degree of compensation present as well as upon the general condition of the patient, his occupation, his habits et cetera.

The relative gravity of the valvular affections according to WALSHE is as follows: Tricuspid regurgitation, mitral regurgitation, mitral stenosis, aortic regurgitation, pulmonary stenosis and aortic stenosis. According to BROADBENT they stand in the following order: Aortic regurgitation, mitral stenosis, aortic stenosis, mitral regurgitation. A factor in prognosis is the extent of the lesion, but this is often difficult to determine. Sometimes the character of the murmur will be of some assistance; however, the amount of hypertrophy and dilatation will be a better guide. The less hypertrophy and dilatation with perfect compensation, the more favorable the prognosis.

Another factor in prognosis is the progressive or the stationary character of the lesion. The lesions of acute endocarditis, especially those following the exanthemata, after becoming once established remain stationary, with the exception of mitral stenosis which is often progressive, the orifice becoming narrower, thus making prognosis less favorable in this than in the other lesions. Those lesions developing as a part of chronic endocarditis or degenerative changes are progressive and are least favorable. Sometimes a murmur develops late in life, which is due to a slight roughness, rigidity or thickening of the valves. In this the prognosis is favorable.

Rupture of a valve is always serious.

Most medical observers consider aortic stenosis the least dangerous of the valvular affections. As mentioned, BROADBENT considers it more dangerous than mitral regurgitation but does not include all cases in which a systolic aortic murmur is present — only those in which actual narrowing of the orifice takes place. This lesion does not cause sudden death and there is little to fear until compensation is disturbed. When this occurs the prognosis is not at all favorable, compensation not being easily restored. If this occurs after middle life the prognosis is discouraging, for the probability is that degenerative changes are taking place in the heart muscle. If the murmur is discovered after middle life it is probably due to degenerative changes and must be looked upon as serious.

If, in aortic incompetence due to acute endocarditis, the second sound can be heard distinctly in the neck, hypertrophy and dilatation are slight and the collapsing character of the pulse is not marked, the prognosis is favorable. If, however, the second sound is faint or lost, and there is marked hypertrophy and dilatation, the prognosis is less favorable, although Stokes, Osler and others have reported cases of marked aortic insufficiency, wherein the patients have led active lives and lived to a good age but, nevertheless, sudden death is liable to occur. In this, as in stenosis, if a murmur develops, late in life the prognosis is rarely favorable. In some cases of marked regurgitation, especially when the patient is young, if stenosis develops the prognosis becomes more favorable. Mitral incompetence is the least serious of all the valvular lesions and prognosis in the majority of cases is good. A patient with even a severe regurgitation may live many years. The lower the arterial tension the more favorable the prognosis. Cases have been reported by such competent observers as Janeway and the elder Flint, in which a mitral regurgitant murmur disappeared after many years, and Flint often consoled youthful patients by telling them they might outgrow it.

Broadbent places mitral stenosis next to aortic regurgitation in order of gravity, while Osler considers it about as favorable as mitral regurgitation. The later in life this lesion is established the more favorable the prognosis. The tendency of the stenosis to increase precludes a favorable prognosis as to prolonged life. If failure of compensation is brought about by slight causes the prognosis is very unfavorable. Cerebral embolism is more liable to occur in this than in any other of the valvular lesions.

With any valvular lesion it is dangerous to grow fat. Chronic indigestion and constipation or any pulmonary complication is liable to cause failure of compensation. Marked anemia even without dropsy or cardiac dilatation makes the prognosis unfavorable.

In making a prognosis every case must be judged separately and every factor in the case carefully studied. In simple acute endocarditis the prognosis should be guarded. The lesion rarely disappears and permanent damage to the valve results.

Malignant endocarditis is almost invariably fatal.

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THE TREATMENT.*

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The question of the treatment of endocarditis naturally divides itself into two main divisions. That of the acute and that of the chronic stage.

Given a case of acute endocarditis, our first idea is what possibility is there of limiting its course and effects by modifying the cause of the disease. Here at the very outset, unfortunately, we are met by the fact that the great majority of cases are due to an infection over which we have little control, but occasionally we may hope to accomplish something. Thus if the trouble arises during the course of diphtheria it would seem reasonable to administer one or two full doses of the special antitoxin of diphtheria, expecting thereby to modify the severity of the inflammation. Again, cases which are of rheumatic origin may be affected by full doses of the salicylates for one or two days, remembering always the depressing influence of the salicylates and exhibiting them only long enough to produce their well-known physiologic effects. Further than this it seems to me that the point for us to remember continually is, that although the prognosis is good as far as a recovery from the attack is concerned, the future welfare of the patient will depend in no small degree on the judiciousness of the management of the initial attack.

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*Read before the Detroit Medical and Library Association.

It is obviously impossible to give the heart complete rest, but the cardinal point in the treatment is to quiet its restlessness to as near its physiologic condition as possible. This shows us at once the importance of careful nursing and of absolute quiet, both mental and physical. The patient should not be allowed to leave his bed for any purpose. This enforced rest should be maintained until by close observance of symptoms we are in a position to say that compensation is well established. Four weeks may be specified as the shortest time within which this effect is produced.

At this time we can further enhance this quietude for the heart by the employment of certain drugs. In the sthenic cases the tumultuous heart can be brought within reasonable bounds by the exhibition of aconite—four or five drops of the tincture every three or four hours carefully watchings its effects. If the pain is great in these cases Dover's powder can be administered with the aconite, or morphin can be administered hypodermically, giving the smallest dose that will relieve the pain and repeating it at short intervals if necessary.

However, the majority of cases are not sthenic and the tendency is to cardiac weakness from the first. Here the cardiac embarrassment and the irregular action may be controlled by digitalis, either at this early stage or as the signs of heart exhaustion approach. Strychnin or the diffusible stimulants, ammonia or ether, stand us in good stead. Usually, however, digitalis is not required until the later stages of the disease, or when the acute endocarditis is passing into valvular disease. Then digitalis must be given in order that the lengthened diastole may allow more time for nutrition of the heart muscle, and so favor the compensating hypertrophy.

Authorities differ widely as to the importance of local treatment. Whatever effect it may have on the disease, we know that the application of ice or heat is often very grateful to the patient. My personal experience is that the ice-bag often gives the greatest relief. We also know how instinctively pressure with the hands is made on a heart working irregularly or violently, and this explains why a large belladonna plaster by the very pressure it exerts is so often soothing and quieting in this class of cases.

I have made no mention of malignant endocarditis, a type of the disease, "which," as HARE says, "is practically always fatal, and the treatment can only be palliative of the urgent symptoms.

As I face the subject of chronic valvular disease it becomes at once apparent how difficult it is to make these combination papers cover so much ground. The subject is too large for the time. Fortunately, from the standpoint of the therapeutist, cases of chronic heart disease have much in common, so that in a general way they can be considered at the same time. In the first place, I believe it is now generally admitted that a variety of changes in the mitral and aortic valves occasioned by endocarditis may persist with typical murmurs for a long time and then disappear, having apparently outgrown the valvular damages. In the second place great numbers of individuals present distinct valvular murmurs, and at the same time the compensation is so perfect that their health is not materially impaired, often for very many years, and the duration of their life is not materially shortened. With these cases the therapeutist has nothing to do except to warn the patients that any old valvular damage becomes a very serious matter when certain debilitating influences so weaken the heart as to destroy compensation. As the gentlemen who have preceded me have clearly shown, the result of this destruction of balance is the same ultimately in all forms of valvular disease, namely, venous engorgement. So that whenever there is a marked tendency to venous congestion of the lungs; to congestion and enlargement of the liver, to edema and to dropsy of cardiac origin, then whatever the valvular lesion may be, the treatment is that of cardiac dilatation. Furthermore, it is not until symptoms of dilatation appear that any medicine should be given. Up to this time the patient with compensated valvular disease should be simply enjoined to be moderate in all things—his exercise, his food, his drink, his indulgence. Particularly must he be warned against all sudden violent movements, as a sudden rush for the street car or the rapid ascent of stairs, in fact everything that subjects the heart muscle to sudden strain. I remember a patient of mine suffering from valvular disease with perfect compensation, who was taken by a friend for a ten-mile spin on a tandem bicycle. He had never been on a wheel before and the distance was ridden at great speed. I saw my patient that night, and he was suffering intensely with all the symptoms of acute dilatation from which he died in a few days. As far as the heart is concerned no drugs are necessary during the stage of compensation. In fact they are prone to do absolute harm. But, unfortunately, in many cases of endocarditis, compensation can only be partially established and the patient is constantly threatened with cardiac failure. For such a one very much can be done by proper attention to diet, hygiene and medication. As soon as the alarm signal is shown by disturbance of the circulation, he should be put to bed and kept from all exciting influences until such symptoms have disappeared. His food he should have at short intervals (four meals a day) and in small quantities, so that the stomach will be thoroughly empty before the next meal. Large quantities of fluid, particularly at meals, are to be avoided because they increase too suddenly the amount of fluid circulating in the blood-vessels.

The medicinal treatment of failure of compensation is very often quite brilliant. I shall not attempt to go into the treatment as it affects the diseased condition of one or the other valve — indeed such a classification is not necessary. The objection, that digitalis is contraindicated in aortic regurgitation because the lengthened diastole allows more time for the blood to run back into the ventricle, is well taken. It is easy to see that in this manner such anemia of the brain may be produced as to cause syncope or even sudden death; but even these dangers are lost sight of as the heart beomes more enfeebled and dilated, so that the mitral valves no longer close and the resulting venous stasis and pulmonary embarrassment demand the administration of digitalis at all hazards. In all forms of cardiac dilatation from valvular lesions, therefore, a sheet anchor is digitalis. It is absorbed slowly and eliminated more slowly so its action may continue for days. No other drug exerts such a tonic effect on the heart muscle. This it accomplishes as you are aware by lengthening the diastole which is the period of repair of the heart muscle. It is unnecessary to add that its effects must be closely watched and its so-called cumulative action avoided. If a dilating heart does not respond to digitalis within a few days, it generally indicates that the compensation is gone forever.

Strophanthus, next in importance to digitalis, is less cumulative in its action, less liable to derange the stomach and often induces free diuresis when digitalis has failed in this request. Strychnin is one of the best cardiotonics and given in doses of one-sixtieth to one-thirtieth of a grain can be continued almost indefinitely.

Caffein has a very uncertain, if any action on the heart, but a very decided action on the kidneys. As a diuretic it is the most important of the heart drugs and is, therefore, of the greatest value when there is renal suppression and dropsical effusion.

Probably the most abused of the heart drugs are the nitrites. They are the most powerful depressants of blood pressure known. They are vascular stimulants in the fullest sense. Nitroglycerin has no action on the heart, but decreases the resistance against which the systole is performed. Remember the effect of nitroglycerin is very fleeting. Its physiologic action is produced in about two minutes and is gone in forty minutes.

In closing I must mention a few of the symptoms of cardiac dilatation in detail because much can be done to relieve the patient beyond the routine treatment of the heart.

For the palpitation we have a measure of relief in the ice-bag, the belladonna plaster and the morphin hypodermic.

The dyspnea of heart disease has a cardinal remedy in nitroglycerin. Many patients carry one-hundredth grain tablets constantly with them and find it absolutely impossible to live without it.

The enlargement of the liver, beyond its treatment from the heart can be benefited by an occasional dose of calomel or phosphate of soda, one drachm to three drachms *ter in die* in hot water.

The bronchitis is largely relieved by the treatment of the heart, but occasionally codein or morphin or hydrocyanic acid will give relief. I am treating at the present time a patient with cardiac dilatation associated with aortic stenosis and mitral insufficiency in whom the coughing and vomiting from congestion of the lungs and stomach were almost incessant, and day or night he was unable to lie down. The dreaded nights he passed without sleep, harassed without ceasing with his cough and his stomach. For a week in addition to the heart treatment I tried codein, morphin, hydrocyanic acid, bismuth, et cetera, without result. One-twelfth grain of heroin every two hours three times stopped alike the cough and the vomiting for three days, after which it had to be repeated.

The condition of the kidneys depends on the blood pressure, and cathartics, by causing a diminution in venous pressure in the abdomen, yield good results.

The anasarca should be treated promptly and the lymphatic spaces cleared. Puncturing with a large sized needle, with all aseptic precautions will often give the greatest relief to the patient, frequently with the disappearance of the asthma, the edema of the lungs, the palpitation and other symptoms. HARE is very emphatic on this point. He says, "Remove the fluid early. The edema does harm locally, and also does decided damage to the heart."

A MEDICOLEGAL STUDY OF EUTHANASIA.*

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AND

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THE last moments of our earthly career, the moments of transition from life to death, present a solemn and direful spectacle. To employ means to keep the dying individual a little longer on life's shore, or to hasten his "shuffling off this mortal coil" is a question which frequently confronts the physician. We are aware that death does not always come gently, "as light winds, wandering through groves of bloom, detach the delicate blossoms from the trees." Most men die from violence or disease; euthanasia is a rarity. Indeed, it is so rare, that the afflictions of only a few organs or structures may bring about this kind of dissolution. We refer to organic cardiac diseases and cerebral apoplexy.

The term "euthanasia" has been variously defined, and is still a word of considerable controversy; so much so, that euphoria was taken to be its synonym, and in a measure, perhaps, rightly so as we shall see later. Euthanasia is originally derived from the Greek, meaning *εμ*, well, and *ταηατθος*, death; also from *τκηκξηον*, to die; or in other words, "a painless death." This is the etymologic substratum of the word. There is also another meaning to it, towit: "a *means* for producing an easy death." It is with euthanasia as expressed in the latter definition that we shall deal in this paper.

But first a few words as to its history. The application of euthanasia is quite ancient. Egypt is, perhaps, its cradle. There, it was extensively practiced among its priests, and to a certain extent among the caste of soldiers. To those castes, stoicism was unknown; pain degrading. The priests took upon themselves the solemn oath to alleviate pain whenever it existed, by any means whatsoever. Their medical armamentarium was deficient. Some of the important narcotics and anodynes were absolutely unknown to them. When their remedial agents had proven inefficacious, and when death seemed inevitable, euthanasia was the only and last resort. Asia, especially the Orient, follows Egypt quite closely in this particular. The Bible tells us of the easy death of ABRAHAM and MOSES, namely: that the soul was kissed away by the breath of the Omnipotent. In fact the ancient Hebrew considered an easy death an earthly reward from heaven, to which only the righteous one could lay claim. Of the peaceful departure of BUDDHA, the Veda and Sanskrit furnish us with a beautiful picture. There it is stated that upon BUDDHA's command the most venomous of serpents, the cobra, inserted its fangs in the locality of the forearm, and that he thus passed away in ecstacy. This and other methods of producing euthanasia are still in vogue in many parts of India. Rome and Greece offer us traditions of a similar nature. In these two countries the most prevalent method of producing euthanasia was to sever the radial artery. Another favorable mode was a goblet of hemlock. Even in modern times the Musselman, and to some extent the wily Celestial, induce euthanasia by inhaling the fumes of the great somnifer, opium, and thus roll into everlasting dreams of enchanting houris, or extensive rice fields. What these semibarbarians do unconsciously, many civilized nations do as a result of ripe consideration and scientific decision. In this respect, France ranks foremost. Whether such conclusions, however, are compatible with the highest principles of ethics, is the question to be discussed in the present paper.

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* Read before the WAYNE COUNTY MEDICAL SOCIETY.

JUDGE SIMEON E. BALDWIN, of New Haven, Connecticut, in the course of an address delivered before the American Science Association, of which he is president, made the following remarks:

"Of late years, it has become the pride of many of the medical profession to prolong such lives [meaning the lives of patients incurable] at any cost of discomfort and pain to the sufferer, or of suspense and exhaustion to his family. The patient has come to a point where he cannot bear the thought of eating. The throat declines to swallow what the stomach is no longer able to digest. He craves nothing but to be left alone. A few hours and nature will come to his release. She is already, perhaps, fast throwing him into that happy unconsciousness of pain which we call lethargy. The vital forces have been spent. The mainspring is broken and the watch has run down. It can be made to tick feebly for a minute or two by shaking it hard enough; but *cui bono?* Only another mainspring can mend it. Only another soul, another world, can give value to this human life that is ready to flicker out because it is worn out." * * * * "Nature has kindly smoothed the sufferer's pillow by leading the way to that gradual exhaustion of the vital powers which follows the refusal of the stomach to receive or to digest food. To force nutriment into the system in such a case through other channels is simply to prolong a useless struggle at the cost of misery to the patient and to the profit of no one but the doctor and the nurse. In determining the nature of a disease, we look to the symptoms for the cause. Nature has so ordered it that symptoms are observed at that time of life when life is most worth saving. A lesion of one organ may then be expected to produce a reaction throughout the system. There is a general sympathy of the parts. On the other hand, in old age, the outward manifestations of an interior lesion seldom indicate that more than one organ is affected, and are often hardly noticeable at all. The patient does not know that he is a patient. There is no occasion that he should. The weakest part of his bodily mechanism has broken down. Why patch it up? Another is hardly less weak, and must soon succumb. Better for him and for his friends that his last days should be unclouded by the apprehension of coming death, and the change come to him quietly as a dream in sleep."

In other words, what the eloquent jugde tells us is simply this: that the physician's duty to *save* life is only applicable in cases wherein there *is* a life to be *saved*. When "the mainspring is broken and the watch has run down," there is no use of repairing. 'Under such circumstances it is better for the patient himself, as well as for his friends, that his life should pass uninterrupted. By no means would the judge tolerate the patient to suffer. He also suggests that death "come to him quietly as a dream in sleep." In short, he favors euthanasia; only in a limited sense, however. At no time during his entire address, does he state that physicians should *directly* hasten death; though should the physician act upon MR. BALDWIN'S advice, he would really do so indirectly.

PROFESSOR L. F. BARKER, of the Johns Hopkins University, at the conclusion of an address delivered before the Ontario Medical Association, Toronto, June 6, 1900, remarked: "If radical cure be impossible he will not forget the palliative; if at last the *exitus lethalis* cannot be prevented, he will at least see that the end is euthanasic."

The French Academy of Medicine at one of its meetings, after listening to many pros and cons concerning euthanasia, conclusively asserted that its application is justifiable whenever death is extremely agonizing and only a question of hours. But it was DOCTOR BACH who determinately advocated euthanasia, in the sense of being a means to produce death. In 1895 at the Medicolegal Congress, the learned doctor said: "Physicians have the moral right to end life when the disease is incurable, painful and agonizing."

The American people, however, are not favorably inclined to the dicta expressed above. To administer drugs with the knowledge that they will produce euthanasia would not only amount to an indictable crime in law, but it would also be regarded as an incongruity to the ethics of the medical profession, and to public morals at large. Euphoria is what the physicians in this country will sometimes apply. The term euphoria means the aptitude to bear pain. It also signifies "causing comfort." That is why euphoria is frequently used synonymously with euthanasia, and that is the utmost that our physicians here will accede to. In no case will they *directly* hasten death.

As a matter of law, it is well settled that euthanasia, in the sense of being a means of producing an easy death, is prohibited. It is an old legal principle, that the *taking* of a life is only excused if it is done to *save* a life. In cases of abortion, for instance, the fetus may be sacrificed, if it is necessary, for the purpose of saving the life of the mother. Of course, it may be argued that a person can only be guilty of homicide if his conduct was the direct cause of death. Hence, if the patient was suffering from a mortal wound, he would have died anyway. Euthanasia only hastened his end; but such reasoning is fallacious and not recognized in law. According to law, "*causing* death and *hastening* death are the same thing, for all men must die sometime." This doctrine is well recognized, and was upheld in Commonwealth versus Fox, 7 Gray, 585; State versus Costello, 62 Iowa, 404; State versus Scates, 5 Jones, North Carolina, 420.

In the case of People versus Ah Fat, 48 California, 61, it was held, that if one was suffering from advanced pulmonary tuberculosis of which he would have succumbed within a month, and a person knowing the patient's condition should intentionally drench him with "cold water, by reason of which death supervenes immediately, he is as much guilty of murder as though he had stabbed him with a knife."

In cases wherein the physician has no actual knowledge of the danger of his treatment on account of his own ignorance, so much so that it will amount to gross and reckless carelessness, he is guilty of homicide. See State versus Center, 35 Vermont, 378; Commonwealth versus Pierce, 138 Massachusetts, 165. In connection with this, it should be remarked, that if a physician administers a certain drug, fully believing that the drug so administered will *not* do harm, but that it will *benefit* his patient, and contrary to his anticipations it kills him, the physician is not indictable; that is, providing the physician exercised ordinary care and prudence. See 6 Massachusetts, 141.

In England, also, it is well established that the physician is liable for careless conduct. See Rex versus Williamson, 3 Carrington and Payne, 635; Tessymond's case, 1 Lewin, 169; Ferguson's 1 Lewin, 181; Rex versus Long, 4 Carrington and Payne, 398; Rex versus Senior, 1 Moody, 346; Regina versus Whitehead, 3 Carrington and Kirwan, 202; Regina versus Chamberlain, 10 Cox, Criminal Cases, 486.

From the foregoing it is obvious that the inability of the physician to foresee the evil consequences of his treatment has no weight with the courts of England and America. The question is always, whether the court found "the evil consequences" obvious. And this responsibility of the physician is binding upon him independent of the consent of the patient. See Commonwealth versus Collberg, 119 Massachusetts, 350.

Should a case occur wherein it would be imperative to administer the maximum dose of a remedy with the intention of assuaging pain and suffering, and should the attending physician anticipate that such quantity is apt to produce simultaneously cessation of the vital functions, and thus anticipating, should he still run the risk and administer that dose—What would be his liability? The law in such cases implies malice. He would therefore be guilty of homicide. See People versus Sanchez, 24 California, 17; State versus Wells, 61 Iowa, 629; Tooney versus State, 5 Texas, 163.

Thus far we have seen the consensus of opinion of the medical profession, and the decision of the courts. This, however, is still far from having solved the problem. Whether euthanasia shall be practiced or not still remains an open question. We know that in many cases euthanasia would indeed be a blessing. Let us illustrate it by the following case, which occurred in the practice of one of the leading physicians of this city.

A man aged seventy received a paralytic stroke depriving him of voluntary locomotion. In consequence of this, he became confined to bed. Improvement took place very gradually. Contrary to the advice of the physician, he began to indulge in walking. He stumbled, fell, and contracted an intracapsular fracture of the hip-joint, which was reduced, but on account of his advanced age, union did not take place. Chronic invalidism was his share. He could never leave his bed. Due to degenerative changes, decubitus set in, producing much distress and agonizing pain. In spite of good care, feeding, and proper medication, he grew worse. The ulcer extended peripherally and into the deeper structures, laying bare the tuberosity of the ischium. The discharge was fetid and cadaverous, necessitating frequent dressings. He was an incessant menace to himself and family. He lamented bitterly and implored the physician to induce death. Even the family could not endure the suffering of the old man, and corroborated his plea. To change the dressings meant disgust and malaise on the part of the members of the family and the physician. Half a grain of morphin was given hypodermically for the pain thrice daily, but without avail. Piecemeal that man decayed away, a source of infernal horror to himself and his surroundings.

Such a case is but one of the instances that occur not infrequently in the physician's practice. Would it not be an act of mercy to practice anesthesia to its fullest extent and allow death to "come to him quietly as a dream in sleep"?

On the other hand, should the portals to the application of euthanasia be open, it is difficult to tell at what stage they would close. Human beings are presumptuous. Make no restrictions and matters will run riot. Society in order to maintain and protect itself cannot rely upon the judgment of certain individuals. The law, therefore, laid down hard and fast rules which every one, without exception, must obey.

Human beings are also weak. Temptations are great. Should law be silent on this point, some physicians would be apt, under the pretense of doing a merciful act, to commit a deed of rascalous felony. To illustrate:

A wealthy old man is suffering from an acute attack of peritonitis. He has an unlawful child to whom he thinks to bequeath his estate. He also has a nephew who is nursing him and who is aware of that fact. This nephew is very anxious to possess himself of this old uncle's estate. Something must be done to prevent the old man from carrying out his intentions. The attending physician is a poor man. The nephew offers him a thousand dollars to apply euthanasia. The physician yields to the temptation. He hastens the old man's ascent to heaven, and a double wrong is thus committed, towit: a life taken, and a rightful heir deprived.

It is thus seen that the permission of the application of euthanasia would not infrequently be a paving of the way to injustice and crime. What then should we do?

Having considered both sides of the issue, our conviction is that after all, it is far better for the welfare of society to let a few suffer than to run the risk of creating crime and criminals. It appears to us that there is ample reason to dread that the practice of euthanasia would in the long run cause more harm than good. That is why the law, laboring as it always does for the best of the majority, has logically prohibited it. The working principle of jurisprudence is still the celebrated adage, of the great utilitarian, JEREMIAH BENTON: the greatest happiness to the greatest number.

In no case, therefore, should the physician intentionally or directly cause death. *Causa causæ est causa causati*" should be his warning. In other words, whenever the treatment of the physician is the direct cause, he should be considered as having created the cause; hence, he should be held responsible for its effects.

The physician is always under a great responsibility. At no time can he exercise too much caution. Due to the variety of circumstances, and the complexity of human nature, no positive ironclad rules can be laid down. But as a general proposition, it might be stated that he should at all times do his utmost to alleviate pain, and make the pangs of death as void of agony as possible. By doing so, he will have complied with the highest standard of ethics, and will earn the gratitude of humanity.

BETTER COMPENSATION FOR LOCAL HEALTH OFFICERS.*

BY HENRY B. BAKER, M. D., LANSING, MICHIGAN.
SECRETARY OF THE MICHIGAN STATE BOARD OF HEALTH.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

MY purpose in bringing this subject before you is to try to get as many of you as I can to take sufficient interest in the subject to aid a movement for the better compensation of local health officers. The subject ought to be of interest to the medical profession, because the law requires that in every locality where it is practicable the health officer shall be a well-educated physician, and there are over fifteen hundred localities in this state where a health officer is required to be appointed and constantly in office. In the interest of the public health this subject is exceedingly important, because all local health work, and the collection of data for use by the State Board of Health, depend very much upon the intelligence, reliability and thoroughness

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[*] Read before the MICHIGAN STATE MEDICAL SOCIETY at the Mackinac Island meeting, July, 1900.

of the local health officers throughout the state; and the very best talent cannot usually be had in that office unless the compensation is adequate. The rule is now that the compensation is not adequate, and in many localities it is difficult to find a good physician who will accept the office. In consequence, some localities claim that it is "not practicable" to have a "well-educated physician" for health officer, as the law contemplates, and a nonmedical man is appointed. When this is reported to the Secretary of the State Board of Heath, an official letter is sent urging that if proper compensation were provided it would not be impracticable to have a physician as health officer, and recommending that this be done; but it is not easy for an officer at Lansing to convince by letter those in authority in a locality that it will pay the locality to put more money into the local health work.

Some years ago a plan was made, which, if it could be put in to operation, would, I believe, result in great good to the public health interests by ensuring adequate, or at least better, compensation to local health officers. In 1892 I put this plan before the State Medical Society, and ever since that time I have tried, thus far without success, to get a bill passed by the legislature permitting the people to try the working of the plan. The subject is of such extreme importance that I again attempt to put it more explicitly before this Society, in the hope that you will urge upon your representatives in the legislature the importance of the passage of some such bill as the one I propose.

The apparent purpose of the bill, as I have prepared it, is to require an annual public meeting under the auspices of the local board of health in every township, city and village. This would serve many useful purposes which must be apparent to most intelligent persons; but the most important purpose — that of getting money into a fund for public health purposes — is not apparent to most persons, without explanation. The explanation, however, is easy, especially to all who are familiar with the methods whereby the money is raised for public school purposes. The amount of the tax to be levied in each locality is fixed at a public meeting held in each year, at which meeting the school board places before the people of the locality the needs of the schools, and the purposes for which the money is to be used. The meeting is supposed to be attended by the taxpayers, and is really attended by the members of the school board and other persons interested in having a liberal fund supplied for the use of the schools. There is usually no difficulty in raising money for public school purposes, because the method is adapted to this object. The result is that about six millions of dollars are included in the taxes we pay each year for public school purposes, not including the half million dollars expended by the University, nor the half million dollars expended by the other State and the denominational and other educational institutions in Michigan.

I believe that even greater taxes are levied upon the people in the money values destroyed by the preventable diseases, and the money is not paid out to teachers, who in turn would pay it to producers of food and clothing, but it is wasted — buried in the graveyards. One of these diseases alone — consumption — causes, in Michigan, in every year a loss, in the money value of the lives themselves, of more than three millions of dollars. Who shall say that the education which shall enable the people to stop this great waste of treasure and of human life is not the most important education?

There is a growing belief that the education of the children of school age, as well as the education of the adult population, in the best measures for the restriction of the diseases which cause most deaths, should be by those who know more about such subjects than does the average school-teacher. A good knowledge of bacteriology, what kind of germs cause disease and how they cause them, how diseases are spread, and how disinfectants act—knowledge in such branches is essential to the best results.

It has been proposed that the functions of the local health officers, be so far broadened as to require those in cities and villages, and who are now required by law to be "well-educated physicians," to place before the pupils in the public schools the "data and statements" supplied by the State Board of Health under the present law, which requires that there shall be taught, in every year in every public school, the principal modes by which the most dangerous diseases are spread and the best measures for the restrictions of such diseases. One health officer of a village has given instruction in bacteriology and histology as a basis for sanitary instruction to the higher grades, the school board having appropriated a little money to fit up a laboratory.

But whether or not such educational work is to be done by the local health officers, by other physicians in the localities or by physicians who perfect themselves in such branches of knowledge, and devote their entire time to this special educational work, to the extent that physicians enter upon the higher plane of the prevention of sickness, to very nearly that extent they must teach the people. How many such teachers are to be required? Possibly more than there now are physicians. And this answers the question as to lessening the demand for educated physicians—this movement is not likely to lessen the demand for them. Although the preventive work would require less medical treatment, it would require more sanitary teaching. There are now in Michigan only about four thousand doctors of all sorts—good, bad and indifferent. There are sixteen thousand teachers in the public schools, and the people willingly pay them. The greatest taxes that we pay to the government collectors are the taxes for school purposes, and these taxes are agreed to by the people at public meetings. Even if all the doctors now in Michigan were to be employed in teaching the people the prevention and restriction of diseases, it would add only about one-fourth as many persons as are now employed and willingly paid as teachers in the public schools.

I believe the people would gain by some such an arrangement, and that the physician who shall enter this new specialty will be doing a very satisfactory and congenial work. But this is really an aside, and not yet a necessary part of the work of the local health officers.

If physicians are to labor systematically for the public health in the ordinary ways, as at present, they must have proper compensation; therefore, there must be a public fund for that purpose; there must be a tax levied and collected. In this country the people rule, and must agree to that tax; and they are not likely to agree to it without some explanation of the reasons why it is desirable. Holding in mind these facts, it becomes plain that there must be in every community wherein a physician is to labor for the public health a meeting of the people, at which meeting the sanitarians shall put before the people the reasons why the tax is necessary, in order to accomplish the greatest good to the greatest number of the taxpayers themselves. And as such taxes must be levied every year, such a meeting must be held every year. Points similar to these have all been learned, many years ago, by those who have had the school interest at heart; and they have acted accordingly, with results which are eminently successful. Therefore, the bill which I have proposed for the purpose is as follows:

A BILL

To promote the public health by providing for an annual public meeting in each township, city and village: for the creation of local funds for public health purposes, and for better official information to taxpayers relative to the sources of dangers to the public health, and relative to the costs and results of proper and effective public health work.

The People of the State of Michigan enact:

SECTION 1.—That it shall be the duty of the local board of health in every township, city and village, once in each year, to place before the people of its jurisdiction statements of its doings during the year just closed, together with detailed statements of its expenditures, and detailed estimates of expenditures needed for the best interests of the public health for the coming year.

SECTION 2.—In all townships, and in all cities and villages in which no charter provision conflicts with this section, the reports and estimates herein provided for shall be for the calendar year; and in the month of January in every year it shall be the duty of the local board of health to call a public meeting of the qualified voters of the township, city or village, at which meeting said reports and estimates shall be submitted by the board of health, and the voters of such meeting shall determine whether the sum estimated by the board of health or any part thereof, or any other sum, shall be raised on the taxable property of the township, city or village; and the clerk of said board shall certify the results of the action of the meeting to the supervisors, assessor or assessors, or other officers whose duty it shall be to assess the ordinary taxes, and such supervisor or other officer shall levy the sums so certified upon the taxable property of the township, city or village, as the case may be, in the same manner and at the same time as the State and county taxes are levied.

SECTION 3.—It shall be the duty of the treasurer of each township, city and village to collect the tax herein provided for, and to keep the money thus collected in a separate fund, to be disbursed on the order of the board of health, attested by the president and clerk of the board, and to report at each annual meeting the amount remaining in said fund.

SECTION 4. It shall be the duty of every local health officer to present to the annual public meeting herein provided for, the facts relative to actual cases and threatened dangers of communicable diseases in the township, city or village, as the case may be, during the past calendar year, the measures taken for their restrictions, and the results; also advice as to measures which, in his judgment, should be taken during the coming year.

SECTION 5.—It shall be the duty of the State Board of Health annually to have prepared and sent to each local board of health, in time for presentation at the annual public meeting, statements of the diseases then present, or threatening, in the vicinity of each such local board, and the best measures for the restriction and prevention of such diseases.

I think the State Board of Health could be relied upon to send to every local health officer such data and statements, and to refer him to such current medical and sanitary literature as would enable him to make such a showing to the public meeting as would tend to cause *some* appropriation to be made for public health work; and whatever sums were voted would be an improvement over present conditions, because now there is no fund whatever in any township or village, and in only a very few of the larger cities is there a fund for public health work. The need for public meetings, in which both parties to the proposed movements—the health officials and the taxpayers—may come together and discuss the restriction and prevention of diseases, is nearly as great in the cities as in country districts.

If I could have my way, at least one-fourth of all the physicians now in Michigan would devote the greater part of their time and energies to official work for the restriction and prevention of disease, and not to the practice of medicine. Half as many more might well be employed in teaching sanitation in colleges, in city and village schools, and at teachers' institutes. This should be satisfactory to the one-fourth or more who choose to accept such work, to the three-fourths or less who remain to practice medicine, and I believe it would be especially profitable to the people in general. On this last phase of the subject I have prepared, read and published a number of papers: "On the Duties and Compensation of the Local Health Officers," Otsego Sanitary Convention, May, 1889; "How Much Should Pontiac Pay its Health Officer?" Pontiac Sanitary Convention, October, 1889; "How Much Ought Negaunee Pay its Health Officer?" Negaunee Sanitary Convention, August, 1891; "The Work and Pay of Health Officers," abstract ot Proceedings of State Board of Health, July, 1892. In those papers, I think, I have demonstrated that it may be economy for those places to pay a physician more for sanitary work than the ordinary physician can collect from the practice of medicine.

The statistic and other evidence collected in Michigan that sickness and death have been, and therefore may be, prevented by educating the people in the best methods of restricting diseases, is now conclusive. The work, which has been proved to have been so effective, has been done without the powerful aid which would accrue from the general employment of physicians, in every locality, specially trained to serve the people as health officers and as teachers of the "higher education" previously mentioned.

The work, however, has been fostered by the leading physicians throughout this state, and I think the same is true in other states; and a vast amount of gratuitous work has been done by physicians, who, in every part of the world, do more charitable work than does any other class of people. It is time now, in the interests of both physicians and the people generally, that the work should be put upon a paying basis. I ask the cooperation in this movement of all interested in the medical profession and in the public health.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, DECEMBER 5, 1900.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.

REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR HIRAM A. WRIGHT read a paper entitled "A Basis for the Study of Insanity." (See page 108).

DOCTOR JUSTIN EMERSON: I believe as DOCTOR WRIGHT does, in the existence of an immortal soul. I believe that the man is not the soul. I believe in dualism. I believe that the man is the soul in the body. To say that the man is the soul and has a body is not, to my mind, a philosophic statement. All the manifestations of the existence of the soul are made through the existence of a body. We never have seen a man who was not endowed with a body; we shall never see one in this mortal life I believe. Of the manner of existence in a future life without a body, we can have no conception for our ideas are based on the existence of the soul in connection with the brain and the body. I hold this to be an incontrovertible truth, that all we know of man is the existence of a thinking ego with a live and active brain. That is the proposition with which I should have started. Man and nature are two phases of the same fact. We study them through our consciousness. The phenomena are only present to us in consciousness. We cannot ignore the fact that psychology properly studied in connection with insanity involves the study of the brain. Those who have studied the insane can best realize that in every instance of insanity physical disease is present. All the teachers of this science agree in that and I believe it. I believe that the soul exists, that it is the entity, which is conscious, but I believe also that it is only conscious so far as we know through the activity of the brain. What there may be beyond, when that brain is destroyed, is impossible for me to say. I do not say that the mind is a secretion of brain; mind is a result of the activity of the soul in connection with the brain, using the brain and the nervous system of the body. The essayist asks us how to explain the emotions, hypnotism, memory, et cetera. I ask him: "Can you explain how a plant, from the quality of the soil, will grow up to be a weed or an apple?" We are called upon to believe the things which we see, and not to explain them. The doctor denies the existence of heredity. The habit of waltzing mice, you will say, is due to some inherited cause. It was an instinct implanted in them by that which brought them into this world. The child resembles its father or its mother in its instincts.

Doctor Hitchcock: I should pray to be most thoroughly understood as most emphatically disagreeing with some of Doctor Wright's propositions. It seems to me that the point on which we can agree is this: A plea for a more thorough study of mental diseases. I think we should have more time for that work. With his plea for the study of psychology we shall concur just as all of us wholly agree that medicine is a great profession and should be appreciated by those only who have had adequate training before they begin practical study. So this should be a part of the knowledge of those who choose the study of mental diseases. Doctor Wright made some startling departures from the accepted order of things. I do not know whether he expects to further the views of today, or whether he expects to take mental or physical issue with those who have already set up standards and theories in this line, however commendable these standards and theories from which he proposes to depart. It is a fact, as Doctor Emerson has already said, that an excitable neurotic organization begets an excitable neurotic organization. These influences occur too many times. The essayist proposes to deny the effect of heredity, and it seems to be a peculiar line of philosophy that he takes up. He denies the laws of heredity because they cannot be explained in all their details. He speaks of mind and brain as entirely separate entities. He believes that the brain could be diseased and the mind remain entirely healthy. It seems to me that Berkley shows the accepted position in relation to the connection of mind and brain. There is here a field in the human organism wherein mind and matter are connected. This connection is not to be denied simply because it cannot be explained in all its details. Psychology is a vast subject, involving questions upon which an investigator could spend a lifetime without solving. Doctor Wright makes the statement that the mind and the soul are one and the same thing, and then says, if the brain is the organ of mind and we destroy the brain, then of course we destroy the soul. That proposition does not amount to anything. He is speaking of the soul in an entirely different sense from that in which he has used it in some of his former papers. One definition of the soul is that it lives, thinks, acts, feels, et cetera; another conception of the soul is that it is the cerebral part of the brain.

Doctor Amberg: The title of the paper being "A Basis for the Study of Insanity," I thought that Doctor Wright would give us some points on which further study of insanity might be based. It appears to me that we may take certain points into consideration, the pathologic anatomy, and the heredity, perhaps, with its chemismus. The essayist disparaged psychologic laboratories. I do not know whether he knows of the work done in Heidelberg in Professor Kraepelin's laboratory. It would take too long to indulge at length in discussing the work. However, I think that Doctor Wright will change his mind after he becomes more thoroughly acquainted with the results attained. I merely mention the findings concerning fatigue and the sense of fatigue which are so important in mania. If I am not mistaken the doctor mentioned separately, mental and moral faculties. I do not think that we can make this distinction; for instance, we have moral insanity which certainly is a mental disease. Furthermore, he spoke of a man being wise or foolish, et cetera. Such a view depends sometimes upon the judgment of other people. They might be foolish and he might be wise. I do not think that heredity can be denied when we see how a son resembles his father or brothers resemble one another. As bearing upon the assertion in the paper relative to the anatomy of the brain, I mention the fact that the brain of the great mathematician GAUSS can be recognized among thousands of brains on account of its configuration.

DOCTOR SAMUEL BELL: I think there is one good feature in the paper—it stimulates discussion. DOCTOR WRIGHT lacks the essential element of clinical experience. However, some of the best books that have been written are by men who never had much institutional experience. I cannot agree with the essayist in all his deductions. I think he has arrayed himself against the best minds in this as well as the old country.

DOCTOR WRIGHT: I have been over all the ground that has been covered in the discussion and my lack of clinical experience has been a virtue. I claim that insanity can be studied just as well from the sane as from the insane. The mind of an individual must be studied, and it does not require a few years of indoor work in an asylum to study the mind of man. What is the difference between studying the healthy or the diseased lung, excepting that we must first study the healthy one and from it deduce certain conditions of the diseased one? We can study what insanity is from the sane as easily as from the insane. The study of one case earnestly is better than a dozen carelessly. DOCTOR EMERSON admits the independent existence of the soul after the death of the body, just in what way he does not specify. Did he ever think of the possibility of the existence of that soul prior to the existence of the body just as well?

EDITORIAL ARTICLES.

DOCTOR PEPPER'S GREAT WORK.

DOCTOR WILLIAM PEPPER has been dead now nearly three years, and although the chief marks of his grand career have already been set forth on former pages of this journal it is a pleasure to recount them and feel the inspiration of his noble and active life. It is doubtful whether his greatness and real worth were really appreciated during his lifetime, but it is safe to say that his sudden passing from their midst gave his friends and colleagues a realizing sense that they will not quickly forget.

Under the caption of "A Remarkable American," MR. FRANCIS NEWTON THORPE contributed to the last number of the *Century* a picture of DOCTOR PEPPER's intensely active life and its extraordinary achievements. He relates that a company of Philadelphians were once staying at a summer hotel and had retired for an afternoon nap. Presently a tremendous noise in the hall brought one of the guests to the door, and in a fit of expostulation she caught sight of a four-year-old boy in kilts marching down the hall, armed with two sticks, and alternately beating on the doors and shouting at the top of his lungs: "No one shall sleep in this house this afternoon, I say, if I can help it." It was WILLIAM PEP-

PER. Fifty years later, when the story was told, a friend remarked: "And no one has slept in Philadelphia for years because of the same WILLIAM PEPPER." In 1870, at the age of twenty-seven, he projected the University Hospital and boldly set about raising an endowment of $750,000 dollars. In four years he had secured more than a half million and the hospital was opened. The success of this great enterprise immediately gave him rank among the first men of the city and was indirectly the means of his appointment as medical director of the Centennial, a position which brought him world-wide acquaintance, recognition and honor. In 1881 he became provost of the University of Pennsylvania, at that time merely a respectable school. During the thirteen years' incumbency of the provostship he created thirteen departments, erected twenty costly buildings for their use, increased the faculty from ninety to nearly three hundred and the number of students from 800 to more than 2,800. For the support of the institution he raised over four millions of dollars and added more than forty acres in the heart of the city to its campus. Meanwhile he was coordinating the educational facilities of the city and state about the University as a centre. He was prominent as a statesman and was apparently as successful in handling legislatures and congresses as he was men. It was said of him that men could not refuse what he asked because he asked nothing for himself nor anything that could not be given. Natural instinct which proved so valuable in one line seemed to work wonders in everything he attempted. His consultation practice began early and evinced a skill that both patient and colleague felt. He was called "a born financier" and gave to the objects of his pursuit nearly a half million dollars which he had earned in the practice of his profession. He was also a voluminous author and kept, besides a retinue of messengers and assistants, two expert stenographers who worked from nine to three or four in the morning. We may question the good sense of his almost unceasing activity, but that it was a part of his generous nature must be acknowledged. The following incident is illustrative of the busy despatch of his many varied interests, professional, social, civil and political. On one occasion at a theatre party which he was giving, after some fifteen minutes, he excused himself and was gone three quarters of an hour. Remaining a short time, he excused himself again and was gone nearly as long. He then returned for a moment and excused himself a third time. He had appeared at three functions, at two of which he had made formal addresses; the third disappearance was for a consultation. After thirty years of such expenditure of energy his public account is stated as follows: Institutions founded: the University Hospital, the Commercial Museums, and the Philadelphia Free Library. Institutions reorganized and recreated: the University of Pennsylvania. Public reforms: the improvement of the city's water supply, and an entire change in the attitude of the public mind toward education and the ideals of life. For the prosecution of this immense work he raised more than ten million dollars and secured about one hundred acres of land in the heart of the city. He cherished plans for an ideal university at Washington. His thought and ambition reached out far beyond his eye and into the succeeding generations, but exhausted nature forced him to relinquish his hold on life and he suddenly expired while taking a much needed but too long postponed rest. On December 20, 1899, a bronze statue of DOCTOR PEPPER was unveiled in Philadelphia, on a site which overlooks a still grander monument, some twenty-five buildings of the University of Pennsylvania.

ANNOTATIONS.

A NEW METHOD OF CLOSING SUPERFICIAL WOUNDS.

THE coaptation of superficial incised wounds is by no means a difficult matter, but occasional mishaps and annoyances prevent the subject from being wholly dismissed. The dread which most patients have of needle punctures, the disfigurement of stitch marks, the annoyance of the surgeon from stitch-hole abscesses and occasional tearing of sutures through friable tissue, make welcome a new and original method of wound closure described by BRETZ in the *Saint Louis Medical aud Surgical Journal*. The method consists briefly in the application, to the clean dry surface on either side of the wound, of two strips of adhesive plaster, into the inner edges of which sutures are drawn and tied. The drawing together of the strips coapts the edges of the wound, which may be treated in the usual manner. The method is simple and yet novel, and will commend itself with variations according to circumstances.

THE STATE HOSPITAL FOR CONSUMPTIVES BILL.

THE medical profession at least will be interested in the final disposal of House Bill, Number 153, introduced into the Michigan Legislature, 1901, and referred to committee on Public Health. Among those who hold the commonly accepted views concerning tuberculosis few will object to the establishment of such a place for the consumptive poor, but there are many objections to putting it "in connection with the University of Michigan" as designated in the bill. Public hospitals for the sick poor are a blessing everywhere and an economical investment. Public institutions for consumptives have already demonstrated their worth in other states and in Europe, and Michigan needs one badly. No time should be lost in putting such an institution in working order. Let the Board of Regents and the Medical Faculty run the two public hospitals that they already have and have had for many years, and which have within recent years felt a heedful response from the powers that be. The State Board of Health and the Board of Regents are both laden with great trusts but neither can fulfill their obligations justly under the embarrassment of greed.

RECENT PUBLICATIONS.

REVIEWS.

DISEASES CAUSED BY ACCIDENT.*

In the editor's introduction, attention is called to the four thousand persons killed and the thirty-eight thousand injured on railways annually in the United States. The nature of the results consequent fourteen weeks or more after the receipt of injuries is the text of this work. It is of particular interest therefore to specialists. The first part of the work deals with general considerations and general remarks on injuries, but the bulk of it is given over to special structures. Forty plates and very many illustrations in black embellish the work, which is a positive and valuable gain to medical literature.

* By Doctor Ed. Golebiewski, of Berlin. Authorized translation from the German, with editorial notes and additions by Pearce Bailey, M. D. Price, $4.00 net. Philadelphia: W. B. Saunders & Company, 1900.

SPECIAL PATHOLOGIC HISTOLOGY.*

This work is arranged in a manner similar to the other Hand-Atlases of this series. The special subjects treated are the organs of circulation, including the heart, the vessels, lymphatic glands, the spleen, the bone-marrow, the respiratory organs, that is, the nose, the larynx, trachea and bronchi, the lungs, the pleura, the thyroid gland; the digestive organs, the oral cavity, pharynx, esophagus, the salivary glands, the stomach, the intestines, the peritoneum. The illustrations include sixty plates, embracing more than one hundred and twenty figures.

* By Docent Doctor Hermann Dürck. Authorized translation from the German. Edited by Ludwig Hektoen, M. D., Professor of Pathology in Rush Medical College. Price, $3.00 net. W. B. Saunders, Philadelphia, 1900.

PROGRESSIVE MEDICINE—DECEMBER, 1900.*

This volume maintains the reputation of preceding issues. It opens with a consideration of diseases of the digestive tract, and allied organs. Particular attention is given to various methods of medicating the stomach and to floating liver. Genito-urinary diseases and syphilis are reviewed by William T. Belfield. Fractures, dislocations, amputations, surgery of the extremities, and orthopedics are treated of by Joseph C. Bloodgood. John Rose Bradford contributes a valuable article embracing the newer thought on diseases of the kidneys. A resumé of the advances in physiology is given by Albert P. Brubaker. Hygiene is discussed by Henry B. Baker, and E. Q. Thornton completes the work with a practical therapeutic referendum.

* Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 428 pages, 69 illustrations. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers & Company Philadelphia and New York.

OBSTETRICAL TECHNIQUE.*

THIS volume contains just what its title indicates. It is a book of precepts and advice adapted particularly to the class of younger physicians engaged in private practice. Ideally the author has a fine conception of his business but practically he is more rigid in his exactions of both patient and physician than many will concede as necessary. It is full of good sense and will surely do the reader good.

*By Joseph Brown Cooke, M. D., New York. Lippincott Company, Philadelphia, 1900.

ATLAS AND EPITOME OF GYNECOLOGY.*

THE title of this volume indicates precisely what it is. It is vastly more than a compend, but not a pretentious treatise. The text is arranged under the following five groups: Anomalies of formation and arrested development; changes of shape and position; inflammatory and nutritional disturbances; injuries and their consequences; new growths. The author treats the whole subject in a practical manner and with the more than two hundred and fifty illustrations has illumined nearly every special point.

* By Doctor Oskar Schaeffer. Authorized translation from the second revised and enlarged German edition. Edited by Richard C. Norris, A. M., M. D. Philadelphia. Price, $3.50 net. W. B. Saunders & Company, 1900.

PROGRESSIVE MEDICINE.*

VOLUME III, 1900, is one of the most valuable numbers of this series. It deals largely with therapeutics. The advances in diseases of the thorax and its viscera, including the heart, lungs and blood-vessels, are given by William Ewart. Henry W. Stellwagon, contributes a practical chapter on diseases of the skin. Diseases of the nervous system are treated by William G. Spiller, and Richard C. Norris' contribution on obstetrics is worth the price of the whole volume.

* Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Lea Brothers & Company, Philadelphia and New York.

THE CARE OF THE CHILD IN HEALTH.*

SINCE the rearing of healthy and well-trained children devolves so largely upon mothers it is gratifying to be able to put in their hands a fund of correct information. We are not personally familiar with the other writings of this author, but in this work he has shown a high sense of the needs and possibilities of the child as well as the duties of parents. It is a truly valuable manual of parental duty. The chapter on the "Relation of Parents to Children" is alone worth the price of the book. The author is of a philosophic turn of mind, and yet he does not lend himself to any fanciful notions.

*By Nathan Oppenheim, A. B. (Harvard), M. D. (College Physicians and Surgeons, New York), Attending Physician to the Children's Department of Mount Sinai Hospital Dispensary; Author of "The Development of the Child" and "The Medical Diseases of Chilhood." The MacMillan Company, New York, 1900.

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

THE ELIMINATION AND CURABILITY OF SYPHILIS.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE relatively great number of cases of syphilis; its general prevalence wherever the human race is found, unaffected by climate or season; the prolonged course of the disease; the gravity of its effects on the individual and on public health; its infectiousness and transmissibility to future generations; its influence on intercurrent disease; its presence so general that no department of medicine is free from it; all combine to make it, though old, an ever new and interesting study, and, whether agreeable or otherwise, a disease which the physician in whatever field must needs meet. The practitioner in internal medicine, surgery, gynecology, ophthalmology, nervous and mental diseases encounters it or its effects at every turn. For these reasons I have chosen a topic for this evening's paper that must interest every member of the society.

Nearly all diseases, other than venereal, get into records one way or another and are tabulated, and many of these tables include under other names complications and results of syphilis. Diseases dangerous to public health are required to be reported. But there are no statistics of syphilis. A half-dozen cases of smallpox in the state, or a single case in any city, creates a panic. As yet no reports of syphilis are required. (I do not wish to be understood as favoring it). It is a privileged (?) disease from the legal view point and physicians protect (?) their patients. Yet I venture the opinion that every physician present has at one time or another had patients suffering directly or by associated diseases from the effects of syphilis, and the aggregate of such cases in Detroit with its three hundred thousand inhabitants would reach into the thousands in a year, and in the whole state of Michigan, with a population of two million four hundred and fifty thousand and over, to many thousands. It is no respecter of persons or rank.

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* Read before DETROIT MEDICAL SOCIETY, February 20, 1901.

It is a popular mistake to suppose that syphilis is found chiefly in the cities. There are few deaths directly from syphilis, and as these are not reported they do not get into mortality tables. Yet syphilis contributes more or less directly to the cause of many deaths, and greatly lowers the aggregate health of the country, and is in every way worthy a more careful study by medical men.

Though justly held by popular opinion to be a discreditable disease, it is the fact of its existence that concerns us as physicians, and how to recognize and successfully treat it.

This moral view of the subject is unfortunate in so far as it tends to concealment at a time when right treatment is essential, and also because it generally fails to discriminate between the morally guilty and innocent. The tendency in the popular mind to classify all unsightly diseases of the skin as communicable, subjects to moral suspicion the innocent victims of acne, eczema and psoriasis, while less conspicuous but genuine cases of syphilis are unrecognized and unchallenged. This popular misconception of the laity is too often strengthened by, if not founded on, thoughtless or erroneous professional opinion. This, however, is of a part with the further popular idea in the minds of the laity of the malignancy and incurability of all cases of syphilis as a rule. And this idea, while greatly exaggerated by quacks and their advertisements, is also too much supported by medical opinion and too much taken for granted in the average prognosis.

The physician who is influenced by these views is too apt to be inefficient in treatment and in infusing moral tone and courage into the mind of his patient, thus helping to a condition of doubt and discouragement, the practical effect of which is to leave many unfortunates to well-nigh hopeless misery and despair at a time when the disease is sufficiently depressing, mentally as well as physically, and when the patient should have the benefit of all the hope his case will bear, viewed in the most favorable light. Many of these cases are as innocent of responsible cause as they are ignorant of results. Many are victims of mediate infection. BULKLEY in "The Syphilis of the Innocent" gives over nine thousand authenticated cases of extragenital nonvenereal origin. I am confident that I have dissuaded more than one patient in this distracted state of mind from suicide, and it is not improbable to me that many cases of suicide attributed to other causes, or unaccounted for, have been largely or wholly due to syphilis. The province of medicine as a science and an art is to cure or relieve patients, regardless of the character or origin of their ailments, and every humane and professional obligation, to say nothing of the protection of public health and future lives, demands that these unfortunate cases be treated with as much consideration as any others needing medical aid.

The literature on the subject is vast. Research in the field of its etiology and pathology has been great and is being carried on by able investigators with a most commendable zeal and energy, and yet we must admit that there has not been the progress in definite and precise knowledge in this field that has characterized work in some other departments of pathology. Though we have learned many valuable and practical facts concerning its history, communicability, behavior and treatment, they have been acquired chiefly through clinical experience.

We are not able as yet to say precisely what is the syphilitic virus, though there are many points of similarity between it and some other infections, notably diphtheria as an acute disease, and tuberculosis as chronic; and reasoning by analogy it is safe to assume that syphilis is the result of an infective germ not yet satisfactorily determined. But though we do not know the syphilitic bacterium, thanks to many recent investigators, we know much more about the histopathology of the initial lesion than we formerly knew of the minute processes of syphilitic infection.

Among some general propositions we should inquire: What are the conditions that influence the course of actual syphilis? What constitutes malignancy and benignancy? What renders it more or less easily curable?

There is no sufficient evidence to prove that the violence of syphilitic virus varies in severe or mild cases. Therefore, it is probable that so-called malignant syphilis results from conditions of age, debility, anemia, poor nutrition, or some intercurrent complication at the time of, or following infection, by reason of which resistance is weakened in the individual, rather than from an especially virulent form of virus. Exposure to the same virus may cause severe syphilis in one and mild in another. The potency of the virus does not materially differ, whether derived from an initial or secondary lesion, or from the blood. Also both mild and severe secondary forms may follow either small or large initial lesions. Also the point of infection, whether genital or extragenital does not materially affect the severity of a case.

Though elimination of syphilis is one of the problems I more particularly wish to consider, it is included in the larger question of its curability. The modern prognosis of syphilis is much more favorable than it was considered a quarter of a century ago. It is quite safe to say that today the large majority of intelligent physicians, general or special, believe syphilis to be a curable disease, as a general proposition. Yet the same men will admit that many cases of syphilis are incurable—at the stage they are seen—and we all know many cases are never cured. This amounts to saying that the curability of an individual case depends largely on the management, and if treatment is to be effective it should date from the first appearance of the primary lesion. Indeed, this early care may be said to bear almost as important relation to the subsequent course of the disease as does the first-aid dressing to wounds on the military battle field; and if every syphilitically infected subject could apply as promptly a suitable disinfectant dressing *to the point of infection* as is done with the wounded in modern civilized warfare, we might expect less need for subsequent treatment in any stage, and the dream of the enthusiast, that the disease be completely obliterated, would be fulfilled. Unfortunately, however, the victim of a syphilitic inoculation is not conscious of the fact of infection at the time it is received, nor of the point at which it finds entrance, until the virus is disseminated and the primary lesion appears as a marker and a local manifestation of a disease already constitutional.

What, then, shall be done in the case suspected to be syphilitic, when seen at the first or soon after the appearance of the primary lesion?

The suspicion should first be verified or disproved—in short the diagnosis determined. Though many cases are easily settled by inspection and history, the character of many other lesions on the genitals or elsewhere is not determined, even by an expert, by a single examination.

Time may be a necessary aid in deciding. I need not discuss in detail the differential diagnosis of the initial lesion of syphilis and chancroid, herpetic, traumatic and other lesions. It is sufficient to repeat with emphasis the need of care which should include thoughtful deliberation. There is no occasion for haste, nor for anything further or more active than the most thorough disinfection practicable, unless there is phagadena or active destructive ulceration, and even these do not always need cauterization, as on the initial lesion they are almost certainly the result of cauterization already unwisely or excessively done or of infection with pyogenic microbes caused by uncleanliness or lack of antiseptic dressings. The treatment of the condition, however, may be begun, tentatively, without waiting for, indeed may assist in arriving at, a diagnosis by a careful avoidance of measures that would confuse or complicate the situation, and should be largely expectant with local antiseptic dressing, preferably dry. Especially do not cauterize the initial lesion. Do not give mercury internally or by inunction or other specific treatment, though try to keep up good nutrition and wait. If efflorescence does not appear within the maximum period of generalization, and no throat symptoms appear, unless the history and behavior of the primary lesion is in a marked degree typical, or premature treatment has delayed development, we should doubt that the affection had been syphilis and be glad that a positive diagnosis had not been announced, and that the patient was spared the mental anxiety inevitable and a long course of specific treatment. Nevertheless such a patient should be kept under observation and specific treatment should be instituted at the first definite evidence of secondary symptoms at any subsequent period.

But why wait? The zealous medical attendant who strongly suspects he has to deal with a case of syphilitic infection is anxious to do something to arrest the disease; and it is to the inexperienced, perhaps, a not unreasonable thought to expect to prevent or abort the systemic disease by destroying this seat of infection, the local sore, which is the only apparent evidence of disease, and which is actively infectious to other persons not immune, and presumably still capable of doing farther harm to the patient who bears it. Unfortunately, he can find even in some recent books, authority for the attempt to "abort" and "cure"—books with highly-colored pictures of some kinds of sores, though it is not stated whether they were chancroid or syphilis, labeled "cured after" so many "inunctions" or "days," and the reader is left to infer that the "cure" was constitutional and permanent, and that the sore might not have healed if treated by simple antiseptic measures. And he asks why wait? Why not cauterize, or excise, or destroy in some way this local sore, whatever it is, and begin at once with specific medication appropriate to antidote this virus, whether the disease proves to be syphilis or not? Judging from the appearances and histories of most of the cases of tertiary syphilis that I see, this has been the plan of treatment. The question, however, is pertinent, but the burden of proof lies with those favoring such a plan, to show why it should be followed.

The usual answer to such a question is, that clinical experience has proven it not only futile to arrest disease, but harmful. It may further be said in passing that the initial syphilitic lesion tends to heal spontaneously; that it is the local manifestation of a disease already constitutional, the infection being beyond the reach of cauterization, excision, or local measures of any kind.

It would be quite beyond the scope of this paper and quite unnecessary before this society, to review the literature of treatment of primary lesions. Going back twenty-five to fifty years, precedents for entirely opposite treatment in plan and in detail may be found in accepted authorities. In former papers I have cited the marked change in the closing quarter of the nineteenth century, growing stronger in the last decade, against beginning specific treatment, local or general, as soon as the initial sclerosis is observed. And now there are few men of prominence accepted as authority in syphilography who advise cauterization, or excision of the primary lesion, or the beginning of internal specific treatment before the appearance of the eruptive stage.

In further answer let us consider briefly the histopathology of the initial lesion. Doctor Robert W. Taylor gives a summary of results of studies of cases, aided by Doctor Ira Van Giesen, which very clearly shows the rapid spread of syphilitic infection from the point of inoculation, and also the futility of excision or cauterization as a means of aborting syphilis. These investigations were evidently made with great care, and are deserving of confidence even if the reputation of Doctor Taylor did not add great weight to their value. Taylor believes that "in syphilitic infection two orders of morbid changes occur: (1) The heterologous new cells. (2) The diffusible poison given off from this highly infectious and rapidly growing tissue."

[*]"The initial lesion was excised four days after its first appearance and eighteen days after the infecting coitus. Consequently it presented the very earliest appearance of syphilitic infection which can be studied by means of the microscope. The chancre appeared as a minute red erosion and consisted of a circumscribed mass of tissue resembling in structure ordinary granulation tissue, but under and beyond it when examined microscopically there was very marked change in the condition of the blood-vessels. This change consisted in the distention of the perivascular spaces with small, round cells. Nearly every vessel examined, both arteries and veins, was in this way enveloped by masses of small round cells, forming a sheath like a coat sleeve round the arm. Beside this condition of the perivascular spaces, there was a change in the endothelial cells lining the arteries and veins which were swollen and seemed to be proliferating. This cell-investment of blood-vessels extended *fully one inch* from the ulcer showing how deep-rooted syphilis is at the very beginning of the sore, and how futile it is, as experience has shown, to attempt to abort it by excising the primary lesion. Apparently judging from the appearance of the vessels in this case, their involvement begins before the appearance of the sore."

This contradicts the theory that the virus remains dormant at the point of infection for a considerable part of the first incubation, referred to by Cornell, Solly, Hutchinson and others, and on the strength of which Auspitz, Lassar, and others in Europe and this country sought to revise the practice of excision after experiencing the failure of cauterization. Rives, twenty years before Ricard, one of the great early apostles of heroic treatment of primary lesions, maintained that cauterization or excision practiced soon enough arrested further lesions; but at this time Ricard confounded the chancroid, the nonspecific venereal ulcer, with the infecting chancre, and whatever success he had was doubtless with a noninfecting sore, or a mixed one, in which cauterization within so short a time after infection might destroy the syphilitic virus before the first incubation. The process of syphilitic infection, therefore, is one of constant growth and diffusion from the beginning. In the very first days of the existence of the chancre, the poison is deeply rooted in the subcutaneous tissue. It is in a most active state and progresses along the course of the vessels until it reaches the body and then infects the whole system.

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[*] Address before the Twenty-first Annual Meeting of the Americal Dermatological Association, Washington, District of Columbia, May, 1897.

But what objection to beginning constitutional specific treatment at once upon the appearance of the primary lesion? Possibility of error in diagnosis, and consequent errors in treatment. Clinical experience shows that specific treatment begun before the eruptive stage interrupts the natural tendency to evolution; delays but does not prevent skin lesions, and subseqent phenomena; obscures the situation; and interferes with desquamation and elimination of poison especially by the skin. There is no evidence to prove, and clinical experience disproves, that mercury or other specific treatment begun before the secondary stage effectually reaches and destroys the syphilitic poison in the partially saturated tissues, or arrests its extension. But there is abundant proof that such a premature administration of mercury leads to a temporary halt; a sort of confusion and scattering of the forces of the disease; a deceptive appearance of gain and a false confidence of cure, or mistaken diagnosis. Discontinuance of treatment is followed by indefinite subsequent outbreaks of latent foci of the diseases, hown in gumma, ulceration, paralysis and other sequelæ. Most clinicians now agree that it is better to wait until the secondary stage is well pronounced before beginning specific treatment, but give no other reason than clinical experience, and the inquisitive reader will be surprised in searching standard or special literature at the meager information on elimination of syphilis. This scarcity of knowledge is not strange, however, in view of the little we know definitely of its infecting germ.

A contention that seems to me not only tenable, but consistent is, that efflorescence and desquamation are eliminative processes, the evidence of the "ripening" of the disease, as it has been called, the culmination of the second incubation; that the observed clinical fact above noted is a rational result of a natural effort rather than a coincidence; that one of the chief harms from premature specific treatment is the interference with this process.

In many processes of disease nature exhibits tendencies to cure or relieve. These efforts unaided may fail, but the tendency is shown. There is force and truth in the popular conception of nature "throwing off" *materies morbi* in many conditions of disease, especially through the large area of the skin. In the cases that for a time apparently recover, as well as those that actually recover, the eruption is often marked. The languor, depression, muscular and other pains diminish, and the mental condition improves after the secondary stage has arrived and the eruption well developed. This cannot always be attributed to the vigor and resistance of the individual, nor to the slight quantity or virulence of the infective material. And if this relieved condition be due to general elimination, then the skin must be credited with a considerable share. Conversely, if premature specific treatment prevents or arrests efflorescence then it probably also arrests elimination by other routes, as well as by the skin.

In other diseases showing exanthematous conditions, the eruptive process of the skin is accompanied by coincident processes of the alimentary and urinary tracts, and interference or interruption of the process in the skin is accompanied by similar interruption of the internal process. For example: In the eruption and sequela of scarlet fever and measles. In interrupted elimination in exanthematous disease we have products of infection left in the tissues, and it is in such cases that renal and other visceral affections occur. These have been held to result from the additional elimination imposed on the kidneys, lungs and intestinal canal, through insufficient excretion of the skin. The immunity of the lower animals to syphilis prevents demonstration of the infectiousness of the products of desquamation and makes the argument necessarily a logical inference as to resemblance in behavior to the exanthemata in many respects.

While no accurate or general comparison can be drawn between syphilis and the exanthematous diseases, there are certain marked points of resemblance which cannot be overlooked. Each is infectious under certain differing conditions. A single attack of each as a rule confers immunity. Each has periods of incubation though varying in length. One is acute and the other may be and generally is chronic. Yet many cases of syphilis end with the secondary stage when untreated and most cases when properly treated show no lesions after that stage. The exanthematous nature of the eruption thus shown establishes a similarity, within limits, which HUTCHINSON assumes between syphilis and variola and scarlatina. But without further pursuing the questions of etiology and pathology of these diseases which have marked points of resemblance, as of difference, may not the analogic argument hold good as to treatment?

In the true exanthemata we regard the eruption as eliminative and endeavor to promote it, and the laity, as well as the profession, understand that an incomplete or prematurely receding eruption is unfavorable, whether it be a cause or a coincidence. The products of desquamation in these cases are infectious, the crusts of variola especially so, and it seems a rational view that the efflorescence of the skin which marks the generalization of syphilis may be to a considerable extent an eliminative process. But whether the destruction of the syphilitic bacillus and the cure of the disease is accomplished by the process of phagocytosis and resistance, or antidotes by mercurial disinfection of the tissues; or the virus or its ptomains eliminated through all the channels of excretion, I believe it will be agreed by physicians having the largest experience in treating syphilis, that a free and pronounced eruption occurring at about the average period is regarded as a favorable symptom. Not alone because it makes clear the diagnosis and indications for treatment, but because clinical observations show these cases, other things being equal, to be more amenable to medication and to run a more uniform and uninterrupted course to recovery.

If this course, which clinical experience has shown to be most successful, is also in line of natural effort, and aids and is aided by elimination, particularly through the skin, the method should still further commend itself to general practice; and physicians, and patients intelligent enough to understand, may more readily see their way to defer active specific treatment, until a stage when the situation is clear; when no harm will result; and when there is an almost certain prospect of doing good.

The discovery of the syphilitic bacterium and antitoxin may change by demonstration much of what now is somewhat speculative.

PREDISPOSING CAUSES OF PULMONARY TUBERCULOSIS.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

I FEEL almost like apologizing for presenting this paper tonight, as the subject matter of it has been so freely and so exhaustively discussed by various prominent pathologists throughout the civilized world, especially within the last few years, that apparently nothing new can be brought forward to enable us to better comprehend the chief underlying causes predisposing the development of acute pulmonary tuberculosis. Indeed it would appear in attempting to discuss any one of them, that it would be like threshing over old straw to garner a few grains of facts for future preservation. However, be that as it may, we have acquired as well as inherited causes, which have in a great measure been ignored, chiefly by an overzealous profession, in trying to mitigate and combat by every known process, real and speculative, the proliferating qualities of the tubercule bacillus, without attempting to deal directly with the prime factors which lower the vitality of the very agents that grant us immunity to the disease. By saying this, I do not belittle the efforts put forward by state and local boards of health, as well as by the general profession, to stay the advance of tuberculosis; for great good has already been accomplished in combating it, and much more can be achieved in the same line by the aid of the state and the individual; for by these agencies we are better equipped to cope against its spread in those not blessed with immunity. But should we lose sight of the physical conditions which favor the development of the tubercule germ? Are not other etiologic factors at work by forming infective centers or foci for the development of phthisical disease? And if immunity is but feebly granted to such as are under the ban of specific infection, or any of its kindred diseases—whether inherited or acquired—what influence can be instituted to limit this condition? These are the burning questions which have been uppermost in my mind for several years—the very ones on which hinge the practicabilty of controlling pulmonary consumption.

Since it is the purpose of this paper to deal directly with the chief predisposing causes of pulmonary tuberculosis, and not with the invasion nor the virulency of the tubercule bacilli which we all respect, let us inquire into the principles which, tend to induce a low and unhealthy state of the constitution which, from any exciting agent, favor the development of tubercular disease, before an attempt is made to answer the above question.

Strictly speaking, everything which induces poverty of the blood, or impairs the nourishment of the body has been considered a cause of consumption. This includes, without defining them here, the deficiencies of all the essentials which go to maintain a healthy being. Indeed, we cannot but deny that anything which depresses the nervous system and causes great drain upon the vital organism tends to greatly encourage phthisical disease. But we can deny that this statement includes the whole truth; for there are usually other etiologic factors or precedent conditions which appear to be necessary to produce this result. Now, what is this dyscrasia—very marked in delicate constitutions but latent in others—which limits the powers of immunized action toward checking the growth of tuberculosis? It is sufficient to say that it is of inherited origin. Though its real nature is beyond our present knowledge, and

* Read before the DETROIT MEDICAL SOCIETY.

though it may never disclose itself by outward signs, it frequently makes its appearance in early childhood and in adult life, especially at the time of puberal development, in the guise of scrofula. This condition of undoubted inherited influence is a distinct affection of unknown origin. Though I believe after careful observation, and from the concurrent testimony of all times, that not only is it more closely associated in all its pathologic aspects to inherited syphilis than to the results of any of the other ascribed influences, such as impure air, poor food, damp dark dwellings, cold damp climate, or through the sequelæ of severe diseases, as typhoid fever, measles, pertussis, scarlet fever, or any other disease which might terminate in a scrofulous habit, but that it is the chief cause of the condition known as scrofula or the disease itself only modified through one or more generations by nature's grand process of gradual elimination, or attenuation in raising the curse. Therefore, I consider this inherited diathesis chiefly of syphilitic origin, which has been transmitted in families through generations until it has lost its specific infectious nature, and assumed another form under the *nom de plume* of scrofula or king's evil. I believe, then, that syphilis blended into this unknown quantity is the chief predisposing cause of both pulmonary and general tuberculosis; and though it might pass from one generation to another unnoticed, it usually unmasks itself before then, generally just prior to or immediately after puberty, in the role of a cachexia, or a condition in which the system of nutrition is depraved. This is marked in those of delicate constitutions who are prone to chronic diseases, especially bronchitis, pleuritis, tonsilitis and enteritis, on the slightest exciting influence.

As an example of this hereditary specific influence, which bears upon the point at issue, let me briefly mention a family of my personal acquaintance which has suffered very severely thus far into the second generation. The male grandparent, strong and healthy, and of a healthy pure family, without a blemish or taint of any disease, contracted syphilis about six months before his marriage to a lady of refinement and purity, whose parents also were physically and mentally pure and healthy. He relied, as he told me a few years ago, on his physician's judgment that he was cured, and could not possibly inoculate his wife, nor even transmit it to his offsping (should he have any). This apparently was true in his case, for he never has shown a blemish of it from that day to this, a period covering more than four score years. About six weeks after marriage his wife showed evidence of the secondary form, but it speedily succumbed to radical treatment, before she was aware of its true nature. They had five children. The first died at seven months from pustular syphilodermatitis, but under the cloak of scrofula; the third and fifth lived to about the puberal period in good health, when they died from galloping consumption, or what we would call acute miliary tuberculosis. The second and the fourth passed through puberty unscathed from pulmonary or any other disease, but both are of rather delicate constitution. The fourth is unmarried, very delicate and prone to nasal, laryngeal and bronchial catarrh, and shows evidence of this cachexia in the premature destruction of her teeth. The second married into a strong healthy family, and had two beautiful but delicate children. One died at the age of five from tubercular enteritis; the other at eleven from cerebrospinal meningitis, but from the history of the case then given it was undoubtedly of tubercular origin.

I cite this family not merely to show the depravity, nor the insidious nature of syphilis, nor the ignominy of its curse, however innocent the person may be who contracts it, but to afford conclusive proof from clinical evidence, that it is inheritable, and that it is more than likely to be the chief predisposing cause of tuberculosis, by a gradual process of evolution or transformation into the scrofulous condition. I could cite a number of other similar cases that prove the law of this heredity, but this would be superfluous.

Now, how far this constitutional influence extends before disclosing its symptoms, cannot be accurately determined; for usually after passing through the first generation, it has lost its pathologic significance. But any observant physician who has had abundant experience knows that though its specific nature may be removed its inherited influence passes intact through generations; and that its final disposition is to attack the lymphatic glands and to depress the power of resistance to external influences previous to any tubercular deposit, thereby producing the condition known as strumous disease. This inherited product is one of the chief predisposing causes of pulmonary tuberculosis. It is the superstructure on which the tubercle develops when the tissues become weakened by the slightest inflammatory action, whether it is the offspring of syphilis or not. In other words, the scrofulous condition is a constitutional disease of a specific hereditary origin, though in some cases it may be acquired; while tuberculosis is a germ productive agent of a contagious or infectious nature, depending greatly upon the supply of the infective matter of scrofula for its development. We are aware, without relating here, that this diathesis, is exceedingly prone to certain diseases, especially to inflammation of the mucous membrane of the air-passages, on the slightest exciting influence, and that their products, being abundant in proliferating cells and abnormal in character and readily absorbed by the lymphatics, are apt to produce secondary inflammation and enlargement of the bronchial, pulmonary and mediastinal glands, and that if their secondary inflammatory products are not reabsorbed in time they become caseous, and thus form the infecting foci for the development of pulmonary tuberculosis. This is true also of the various glandular structures of the body, especially of the lymphatic glands of the mesentery. No doubt this constitutional debility is produced by other causes also, especially when syphilitic history is absent. We are compelled, then, to trace its origin to other sources, though I look upon them only as accessory acts of the original virus. Intermarriages, very early marriages, advanced age of a parent, close confinement, imperfect ventilation, lack of fresh air, constant residence in a humid atmosphere, insufficient or indigestible food, intemperance, any interference with the development of the chest or body, the sequelæ of previous diseases, long continued dyspepsia, prolonged lactation, excessive sexual indulgence, undue mental labor, and depressing passions, are all classed as predisposing causes of tuberculosis, through their depressing influence on the general system. But I have grave doubts whether any one of them is capable of transmitting its acquired dyscrasia, for it does not contain any of the specific elements, which are so essential to produce the scrofulous cachexia; but both are prone to the development of the tubercle; they both destroy the immunizing function of the healthy organism. The former is never under the ban of the specific virus and I believe cannot be transmitted, whereas the latter is purely constitutional, and depends upon the syphilitic virus entirely, for its transmission.

The contagiousness of tuberculosis must, then, depend on one or the other of these conditions. I do not think it is possible for a healthy person, born of healthy parents, to contract tubercular disease, unless he acquires a dyscrasia through prolonged sickness or personal abuse. If this were not so, we would all be in an alarming plight, for practically speaking, we are surrounded on every side by these pathogenic micro-organisms; the air we breathe, the food and drink we partake, and the clothing we wear, may be loaded with them. Every person in a large community like this, is at all times more or less exposed to the tubercular contagion. We cannot escape its influence, try as we may, for every reputable physician knows that tuberculosis is a very prevalent disease among us. We hear of it on every side. In its advanced stages we find it confined in the home; in its incipient form we find it in the church, the school, the theatre, in fact in every place of public meeting, even in the store and the workshop, so that really no one can dodge its contagious influence, try as he may; and unless shielded and protected as we are by the inherited principle of immunity, which is constantly offering resistance to the encroachments or invasions of this disease, we would all be under its ban and sooner or later perish. It is to the integrity of these inherited principles, coming down to us through generations unimpaired, by any specific virus, that we owe our safety. To protect and strengthen those constitutional safeguards by every legitimate means possible, against the ravages of tuberculosis, is the only hope, the only solution for staying its advance in future generations. In my mind this is the only rational plan by which it can be controlled.

Now, what about this parent of scrofula? Let me quote the collected opinions from a few of the eminent physicians of the immediate past and the present, based chiefly on their clinical observations, though authors in general barely allude to them. NEYMIER considered syphilis as the basic principle of all scrofulous lesions. ROBERTS believed syphilis tended to influence its development, which in turn produced the soil favorable to the growth of the tubercle. HUTCHINSON, one of the keenest observers living, having had vast experience at London Hospital, traced many chronic skin troubles of scrofulous origin directly to it. SIR MORELL MACKENZIE, although he never connected syphilis with the development of scrofula in his work, spoke frequently about it at his nose and throat clinics. He fully believed that this dyscrasia had its origin in transmitted syphilis, and that it was closely related to laryngeal tuberculosis. While I was a student under him, he told me, on inquiry, that he could very frequently trace the scrofulous tendency to the syphilitic; but the great difficulty of proving this relationship was that pathologists could not connect the one with the other, although they firmly believed from the abundance of clinical evidence furnished, that it did exist. GRAINGER STEWART, of Edinburgh, contended that the scrofulous condition is in a great measure closely related to inherited syphilis. FLINT, PEPPER and LOOMIS construed the true origin of scrofula, but evaded its significance in their respective text-books. The last, I know, was a firm believer in the capabilities of its transmission; for during 1884 and 1885, while receiving instruction at his private clinics, I frequently heard him discourse on its hereditary nature. He contended that scrofula is one of the chief predisposing causes of pulmonary tuberculosis; and that the latter is only contagious, when it finds just such a condition to develop the tubercle. The late LOUIS GROSS, of Philadelphia, also was an uncompromising believer in the hereditary tendency of syphilis. More than this, he believed that all the so-called cold abscesses and general glandular enlargements tending to malignancy are caused by it indirectly. He expressed in language similar to that of RICARD's which will last until truth is lost that "if the dogmas of humoral pathology had ever been lost, syphilis would suffice to revive them; for in this disease the blood becomes charged with the poisonous principle, and the tissues thus subjected to a vicious nutrition are infected and undergo successive and regular changes to a certain degree in the order of their vitality."

I could quote other equally prominent men who held similar views: that not only is syphilis inheritable, but that it is a dangerous constitutional element to be transmitted, for it makes the condition favorable to the growth of many fatal maladies, which have already destroyed entire families, but our time is too short to relate their testimonies. Syphilis thus transmitted, I consider one of the chief factors largely responsible for the conditions that support and favor the development of tuberculosis. It is largely dependent, too, upon the dyscrasia developed from other conditions already alluded to—chiefly, prolonged abuse which is rarely if ever inherited. Either of these conditions is irresistable on the slightest excitable influence and consequently yields to any low type of disease, but more especially to that of tuberculosis. These similar conditions produce the same results — they destroy the resisting power of the body to disease, but the one terminates its influence at the death of the inflicted, whereas the other can be transmitted from generation to generation. It is this latter inherited condition, produced as it is from primary syphilis that gives rise to more local and general inflammatory actions than any other known cause, which gives us the most concern. It is prone to attack all classes of tissue, but more especially the glandular structures of the pulmonary organs; hence this concern.

This fundamental process, naturally, then, resolves itself into the question: Can syphilis be subdued or controlled? If it can, we will have accomplished more toward checking the spread of pulmonary tuberculosis, and other kindred maladies than all the prophylactic measures thus far instituted. Judging chiefly from my own experience and observation—for there are no other statistics except hearsay—there would be at least fifty per cent. fewer tubercular cases in one or two generations from now than there are today; indeed this subjugation would be the salvation of the generations to come. For the sake of charity and the benevolent feeling we have for our children, we should not have them suffer our sins, knowingly, as we have from our fathers, ignorantly. This greatest curse of nature I believe can be obliterated, but the task rests entirely upon the moral suasion of the general public, and the enactment of forcible laws by the federal government. If every person were convinced that there is no more culpable act than to communicate this disease, that its consequences are far-reaching, that it is not only a scourge to the individual, but that it descends from one generation to another, they would voluntarily retire from the scene until they are entirely free from communicating the syphilitic poison. In this way we could extinguish syphilis forever. But when passion masters the conscience, and pleasure surpasses the unpardonable thought, whether through viciousness or ignorance, all such persons should be subjected by law to some form of isolation, just as much as in any other threatening disease, until all danger from the infection is gone. A federal law of some kind, similar to our public hygienic laws would be the greatest prophylactic measure ever put forward to check the onward march of this progressive but loathsome disease. I believe such a law would be effectual, and that the present as well as the future generations would be rewarded.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

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If the general practitioner firmly believes, as we think he should, that tuberculosis in its early stages is a curable disease and curable with remedies which are as accessible as the therapeutic agents used for less frequent maladies, it then becomes his duty to make use of those measures at a time when the disease is still amenable to treatment. It is not the purpose of this paper to expound any new or infallible diagnostic aids, but rather to accentuate the importance of an early recognition of pulmonary tuberculosis and to recapitulate the present known methods of arriving at such conclusions. In approaching this subject and in considering it from all sides, we cannot fail to be impressed that it is the careful study of the patient with the help of all available aids to diagnosis that will bring about correct conclusions which are so desirable and so necessary for successful treatment. To accomplish this we must abandon careless methods and routine habits. The simple inspection of the tongue, the counting of the pulse, and the putting of a few questions, many of which are foreign to the patient's health, are procedures totally inadequate for this purpose. The art of making an early diagnosis in tuberculosis consists in the consideration of all the symptoms which are presented and of attaching to them the proper importance which they warrant. Such a procedure, of course, implies the expenditure of some time and the exercise of considerable patience. In view of the terrible frequency with which this devastating plague presents itself, it behooves us to be constantly on the watch for its first appearance and in cases wherein the symptoms are obscure always to consider whether tuberculosis is not developing.

The question of taking a careful history of the patient in whom tuberculosis is suspected is one which does not admit of much discussion whether one believes or not that heredity is a powerful predisposing factor. While it is important to obtain as much light as possible upon the health of the patient's ancestors by framing inquiries about their resistance to disease in general as well as their susceptibility to tuberculosis, it is perhaps of more importance to take up carefully the previous personal history of the patient, and from the facts thus elicited draw conclusions as to his natural resisting powers. In view of the heated discussions that have taken place, and perhaps will take place for some time, as to the communicability of tuberculosis under the ordinary conditions of life, it is perhaps well to make careful inquiries relating to the question of exposure and if there seems to be a well-defined history of such liability to infection to make careful notes in order to elucidate this mooted subject as much as possible.

* Read before the Detroit Medical Society.

In taking such a history the question of infection of the patient's lungs from some tubercular area in other parts of the body should be duly considered, inquiring particularly about chronic joint affections and enlargements of the lymphatic glands. Hemoptysis is often an early symptom and if present, after exclusion of cardiac and hepatic lesions, warrants the most painstaking investigation. Thoracic pain is usually indicative of pleuritic trouble which in turn may or may not be tubercular; pain, however, may be superficial and located entirely in the muscular tissues. The question of weight should be carefully inquired into, as progressive loss of the weight in the absence of other easily recognized causes, is to be considered indicative of tuberculosis, although, exceptionally, cases may be encountered, wherein the weight increases for a time, though the disease is advancing. The afternoon temperature should be taken, if possible, for several successive days, as without doubt a recurring subnormal morning temperature followed in the afternoon by mild pyrexia is one of the most reliable signs that we have. General malaise with marked disinclination to perform the usual daily duties is an indication oftentimes of a toxemia which may have a tubercular basis. The question as to whether the food is properly assimilated should be carefully investigated as digestive disturbances are frequently one of the early constitutional manifestations. Laying aside physical examinations, the most important points then to be considered are loss of weight, afternoon rise of temperature, acceleration of pulse, and digestive disturbances; each significant of tuberculosis and when found together should render such a diagnosis highly probable. Persistent cough is usually considered significant by the patient himself, and if pharyngeal or laryngeal irritation be excluded is to be considered of considerable weight; however, not infrequently, the cough is so mild even in otherwise well-marked cases, as to cause little stress to be laid upon it.

In regard to the microscopic examination of the sputum the writer has no hesitancy in urging its more frequent use. It would certainly seem a wise precautionary measure to examine the sputum in every case in which persistent cough, or other pulmonary symptoms are manifest, extending over a period of four weeks. Clinical experience teaches us, however, that oftentimes the physical signs and subjective clinical symptoms are sufficient to warrant a positive diagnosis before bacilli are found in the sputum. In no case should pulmonary tuberculosis be excluded through one negative examination. Negative testimony to be of weight in regard to tubercle bacilli in the sputum should be based upon repeated examinations.

It is, perhaps, unnecessary to remark that a physical exploration of the chest should be made whenever there are any symptoms which point to the lower respiratory tract, and I should be most diffident about venturing such seemingly useless recommendations, if I did not so readily call to mind patients coming into my hands, after having been under the care of other practitioners, in whom the chest had never been previously examined, although the subjective pulmonary symptoms were most marked. When we consider the subject of physical examination of the chest, we should remember that the early changes in pulmonary tuberculosis are slight, and hence liable to be overlooked unless the examination be painstaking and thorough. It is practically useless to examine only a few square inches of the anterior upper surface of the chest wall; indeed it is rather worse than useless since such hasty examinations will usually fail to locate slight pulmonary lesions, and thus a sense of false security will be instilled in the patient and his physician. All chest examinations to be of value should embrace the whole anterior, lateral and posterior regions of the thorax. In order to do this satisfactorily the patient should be stripped to the waist. Inspection of the extent of the respiratory excursion should be carefully made with special reference to the immobility of the infraclavicular region on each side. Palpation of the chest in the earlier stages of pulmonary tuberculosis is not of especial value. The cervical region, however, should be carefully examined to determine the presence or absence of enlarged lymphatics. Percussion also rarely affords decided evidence of slight pulmonary impairment unless indeed the observer possesses the natural gift of distinguishing a slight change of resonance or has gained such skill through long experience. In beginning tuberculosis the lesion is usually unilateral. Hence, the necessity of a careful comparison of the resonance of one side with that of the other. In this connection I should like to emphasize the value of what is termed auscultatory percussion in which the percussion note is conveyed to the ear by means of the stethoscope, the bell of which is placed either immediately in front of the patient's wide-open mouth or adjacent to the area percussed. In auscultation we have the means of detecting pulmonary changes earlier perhaps than by any other method at our disposal. However, we should remember that even by auscultation deep seated or, so-called, central lesions are not recognizable except by the most careful comparison. Particular attention should be paid to the expiratory sound since a weakened or diminished respiratory murmur with a prolonged and high-pitched expiratory sound is the earliest change that we are able to recognize. Such prolonged expiratory murmur indicates obstruction of the free exit of air from the finer bronchi and alveoli. Oftentimes auscultation will simply reveal a break in the inspiratory act so that perhaps in the middle or toward the latter part there is a decided hitch; in the absence of any previous well-defined history of pleuritic trouble such interruption is to be interpreted as a pleuritic adhesion caused by a superficial tubercular area. I will not weary you with the classical signs which indicate the presence of advanced pulmonary infiltration or necrosis, but wish to emphasize particularly the necessity of close attention to the slight changes in the respiratory act.

Of late I have been extremely interested in the use of the x-ray in the examination of the chest. However, I have not been personally able to detect pulmonary changes by its use earlier than they were indicated by auscultation. However, it is claimed by the enthusiastic advocates of this method that a diagnosis can be made earlier by the means of the x-ray than by any other method at our disposal. It is, of course, necessary in this direct observation that certain conditions be favorable. For example, in order to detect a slight change a Crooke's tube of moderate low vacuum should be employed since with the high vacuum tube the penetration is so great as to obliterate changes in the soft tissue. I may perhaps illustrate my meaning by referring to the different results obtained in different parts of the body by the use of tubes of varying vacuum. For example, a skiagraph of the hand with a high vacuum tube will reveal simply the osseous structure, while a skiagraph of the same hand taken under proper precautions with a low vacuum tube will differentiate to a great extent the soft tissues bringing plainly into view the more transparent parts, as the tendons. In all cases which I have had so far for examination wherein the auscultatory signs revealed the presence of pulmonary impairment, the fluoroscope showed a limitation of the excursion of the diaphragm on the effected side. It is highly probable that we are destined to have a valuable confirmatory aid in the use of x-rays in chest examinations. It is interesting to know that while the apparatus necessary at the present time is somewhat complicated and expensive, the recent discoveries of science in the finding of the new radioactive elements, polonium and radium, may afford us in the future an easy method of direct inspection of the pulmonary tissues.

As I stated before, the early diagnosis of pulmonary tuberculosis will be arrived at by a careful study of the patient, taking advantage of all approved methods of diagnosis. If such early diagnosis could always be made, or in doubtful cases the patient be given the benefit of the doubt, and the hygienic regime of the patient altered to more favorable conditions while the disease is still incipient, the present alarming mortality would speedily diminish.

A SHORT SKETCH OF THE SURGICAL TREATMENT OF OTITIS MEDIA SUPPURATIVA.*

By EMIL AMBERG, M. D., Detroit, Michigan.

[Published in The Physician and Surgeon exclusively]

It is not possible, and therefore not my intention, to give you in a short paper an exhaustive review of the surgical treatment of otitis media suppurativa. I shall confine myself to some of the more important operations, and demonstrate the same by the aid of prepared specimens.

1. *Otitis Media Suppurativa.*—In treating acute otitis media suppurativa there exist different opinions as to when the drum membrane should be incised. It is generally admitted that violent pain, with more or less bulging of the membrane, or with none at all, rise in temperature, sleeplessness, et cetera, require surgical interference if medical remedies do not quickly afford relief. We can generally come to nearly an accurate view of the necessity of incision if we further take into consideration: (1) That paracentesis, as such, is practically harmless. (2) That danger accompanies only delay. (3) The curative value of the incision. (4) The prophylactic value of the same. Personally, I am an advocate of early paracentesis, and agree with those who think that comparatively more danger is incurred in postponing the incision than in making it. This is especially the case in otitis media after influenza. If an incision is made, it should be done thoroughly as Bacon[1] also says, extending from the region of the stapes down to the bony canal. The reason for an early incision can be easily understood. We know that the tympanum represents the lowest readily accessible part of the middle ear cavities and it is a general principle in surgery to drain at the lowest point. We know, through Politzer[2], that in every acute middle ear suppuration pus is found in the cells of the mastoid process. This does not, necessarily, mean that inflammation of the mastoid is present. We can readily see, however, that the free drainage helps nature in its healing process by preventing an accumulation and a propagation of pus.

Paracentesis should be mastered by every physician. Doctor Weil[3], of Stuttgart, says: "I openly declare that I think that the knowledge of paracentesis of the drum membrane is much more important for the

*Read before the Detroit Medical Society.

physicians than the knowledge of all the great operations, of resections, et cetera, to which is given so much time in the college." He quotes **Bezold**, who showed that of nine hundred and eighty-four ears after scarlet fever, in two hundred and forty-eight the drum membrane was destroyed entirely, and that at least two-thirds of the same were destroyed entirely in two hundred and forty-three ears, that whispered voice could not be heard in one hundred and thirty-three, and that polyps and granulations were found in two hundred and seventeen instances. **Weil** adds that the greater part of these unfortunate patients would have been benefited by better treatment especially by paracentesis.

Concerning the surgical treatment of even uncomplicated otitis media suppurativa chronica, opinions gradually turn more and more toward a radical interference, if milder treatment is not successful. Warned by the occurrence of complications, namely, extradural abscesses, lateral sinus thrombosis, brain abscesses—of the latter one-third as we know are of aural origin—and other complications, the surgical interference by the mastoid operation and by the more or less typical radical operation becomes more and more familiar. As to the treatment after paracentesis, whether it should be carried out dry or moist, the decision depends upon the amount and character of discharge. The necessity for surgical interference in respective ear-affecting conditions of the nose and of the nasopharynx and throat is a well established fact.

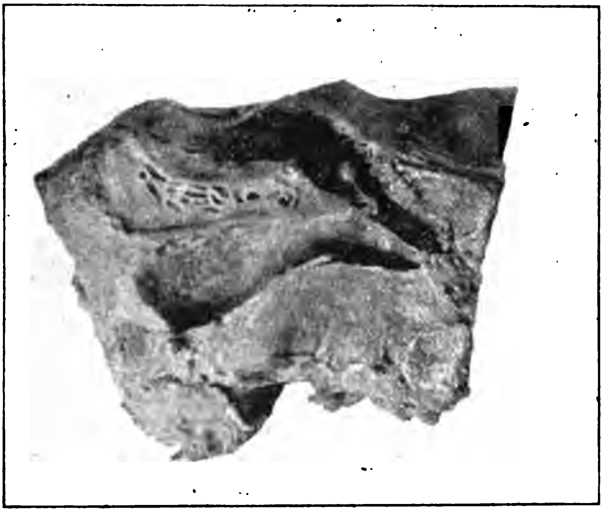

FIGURE 1a.—Specimen showing vertical section through meatus, tympanum, et cetera. Prepared (decalcified, et cetera) by author.

(2) *Polyps.*—According to **Kiesselbach**[4], polyps may be: (1) Round cell polypi. (2) Soft fibromata. (3) Hard fibromata. (4) Myxomata. Especially important are those polypi which may lead to a pus retention. Polypi are removed with a cold snare, and the root is destroyed with chromic acid, nitrate of silver, et cetera. Concerning the nitrate of silver I must remark that **Katz**, of Berlin, stated, if my memory serves me right, that the use of nitrate of silver may under certain circumstances

cause facial paralysis. It is evident that great care must be exercised in removing polypi, as an operation for a polypus is not always quite so simple as may seem on first appearance. This is obvious if we consider that polypi are mostly, if not always, secondary to a chronic suppuration which may have gone on for a long time and may have resulted in caries and necrosis of various parts of the middle ear. In cases of doubt we should endeavor to get at the root of the evil by performing a radical operation.

We can easily explain why the laity concludes that it is good that the ear "runs," and that a stoppage of the discharge from the ear is detrimental. As long as a perforation of the drum membrane is not obstructed, pus can escape to the outside. If, however, there is a polypus which obstructs the passage, the discharge must seek some other outlet. Considering that polypi are, mostly, as I said before, the results of a chronic suppuration of the middle ear, which may have led also to other changes—caries or necrosis—and which may have added to the weakness of the points of least resistance, we can readily imagine what may follow such an obstruction. Thus we can understand that in some cases the common belief is not by any means without foundation, although, thanks

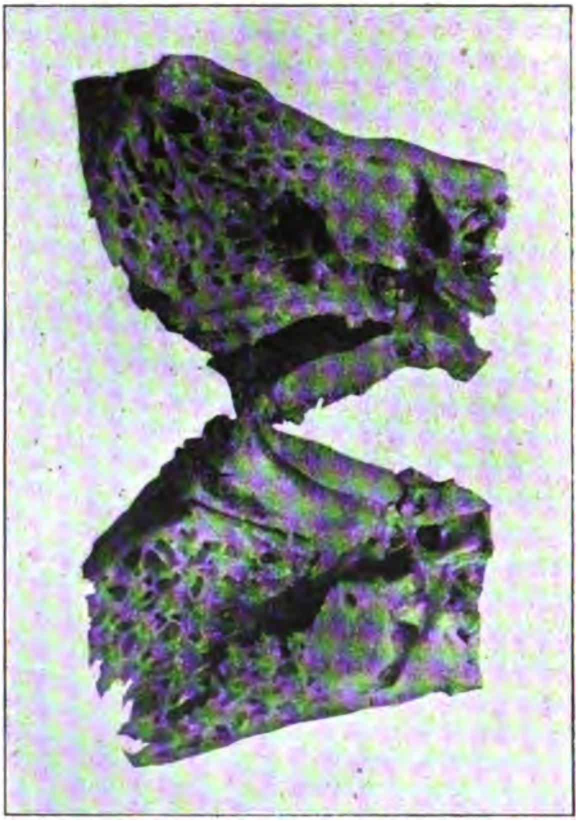

FIGURE 1b.—Specimen showing horizontal section through upper portion of meatus, et cetera, displaying meatus, tympanic and epitympanic cavity, antrum, et cetera. Prepared (decalcified, et cetera) by the author.

to our better understanding of the symptom, it only hastens surgical interference. Care must be taken to differentiate between a polypus and the conical elevation of the drum membrane with a perforation on its top.

(3) *Diseased Ossicles.* — Concerning the affections of the ossicles, LUDWIG gives the following data: The anvil is subjected to caries more frequently than the other ossicles. The cause for this is the fact that of the three ossicles the anvil is in the most unfavorable position for being nourished. Mostly the long handle is affected. When the hammer is diseased the head is generally the site of the disintegration.

SCHWARTZE[5] says: "High-situated fistula in the Shrapnell's membrane over the processus brevis indicates affection of the head of the hammer." Furthermore, "(1) Small growth of granulations under the remnant of the membrana tympani upward and backward, or a drop of pus constantly appearing in this place, et cetera, indicates caries of the long blade of the. anvil. (2) Perforation behind the hammer reaching upward to the lower border of the membrana Shrapnelli also indicates caries of the long blade. (3) Fistulæ in the membrana Shrapnelli behind the processus brevis mallei indicate isolated caries of the anvil. If we have two fistulous openings over and behind the processus brevis, or if the whole membrana Shrapnelli is covered with broad granulations the coincidence of caries of the hammer and of the anvil is very probable."

In removing the diseased hammer and anvil, different instruments are necessary for each ear. The operation is done in the following way: The membrane must be loosened, then the tensor tympani is cut, the incus stapes joint is severed, the hammer is removed. This requires some technical skill. The author[6] showed an instrument two years ago before the Michigan State Medical Society which may also be useful in removing the hammer. Afterward the anvil is taken out. In removing the anvil great care must be exercised in order that the facial canal may not be injured.

In the following illustration we can readily see why the removal of the hammer and anvil may help the healing process of a chronic suppuration by removing a focus of infection and by making the epitympanic cavity more accessible to treatment.

(4) *Mastoid Operation.*—SCHWARTZE[7], to whom we are indebted for the revival and scientific establishment of the mastoid operation, gives the following points as indications for the opening of the mastoid: (1) In acute primary and secondary inflammation of the mastoid process, if under application of antiphlogistic remedies (especially application of ice), pain, edema and fever do not cease after a few — not more than eight—days. (2) In chronic inflammation of the mastoid portion with repeated attacks of swelling which disappear for a time, or with already formed abscesses, whether fistulæ over the same with descending abscesses on the side of the neck and throat, in the meatus, or toward the pharynx, even if for the time being there do not exist symptoms endangering life. (3) In chronic suppuration of the middle ear, without other symptoms of inflammation of the mastoid, as soon as symptoms appear which make it probable that there is a complication endangering the life, caused by retention of pus or the formation of cholesteatoma. (4) In otherwise incurable neuralgia of the mastoid process. (5) As prophylactic operation against fatal sequela of incurable fetid suppurations without signs of inflammation on the mastoid process and without signs of retention of pus (pain, fever) as soon as an exact otoscopic

examination shows that the suppuration is not confined to the tympanum.

(5) *The Radical Operation.*—We must discriminate between a radical mastoid operation and a radical operation proper. Stacke[8], one of the originators of this operation, says, "The radical operation is indicated as soon as the diagnosis is established that we have a chronic suppuration of one of the three parts—the epitympanum, the aditus, or the antrum—otherwise incurable, whether it be caries, granulous osteitis, cholesteatoma, necrosis, or empyema with more or less diseased walls." Grunert[9] thinks that "it is sometimes rather difficult to make the diagnosis that those parts of the tympanum are diseased, and furthermore it is left to our individual judgment to say when we must consider the suppuration as incurable by other means."

We know that the object of the radical operation is to form one smooth cavity containing the tympanum, the epitympanum, the aditus ad antrum, and the mastoid cavity, with the removal of the lateral wall of the epitympanic cavity, of the posterior wall of the meatus and of so much of the mastoid as necessary. We are indebted for this operation especially to Kuester, Zaufal, Stacke and Schwartze. Three methods are in use; Zaufal's, Stacke's and Schwartze's. Zaufal begins from the outside by removing the posterior wall of the meatus and works from without inward. Schwartze performs first the typical mastoid operation and works from without inward. Stacke removes first the lateral wall of the epitympanic cavity and gradually works from within outward. Considering that this subject is at present of great importance, and will be of still greater importance in the future, and further that the originators are still living and that some of them are at variance with one another as to the merits of their ideas, I cannot restrain myself from quoting at least a part of their remarks[10].

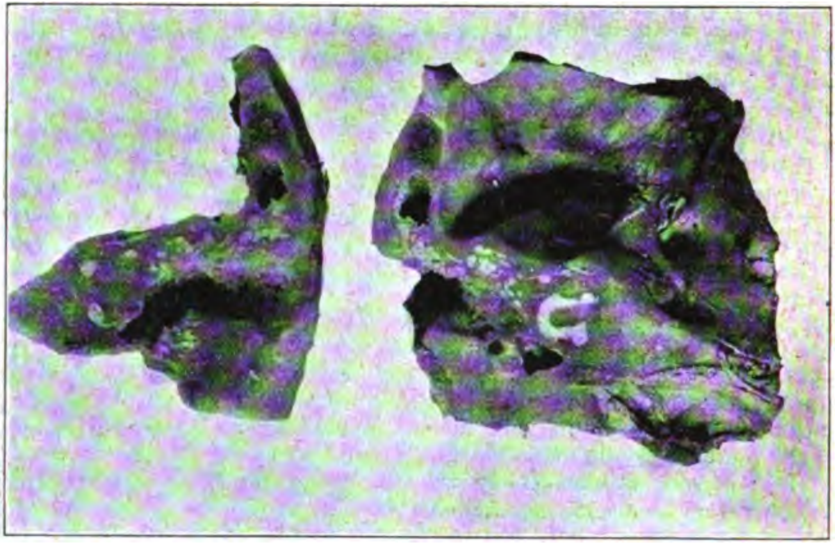

FIGURE II.—Specimen showing mastoid operation. Horizontal section. Horizontal semicircular canal, short process of incus, et cetera, visible. Prepared by author.

Zaufal says: "I believe the question of a radical operation of the middle ear cavities culminates, now, in the question, Which method shall be recommended as the simplest one to be carried out, and is deprived of danger for general use? According to my opinion it can be only that method which is carried out after general surgical principles. These consist, as **Kuester** showed, in the broad opening of the focus of the diseased part and the removal of every diseased part, under the guidance of the eye. In carrying out this principle it is understood that the natural surgical rules must be followed: to lay open the focus hidden in the depth by preparation which works gradually from without inward; that means from the surface to the depth, so that we have at every moment of the operation a free supervision of the field of operation. These principles are followed by Kuester's method, which gradually chisels away the mastoid process to the posterior wall of the meatus, and my method which supplements it by removing the parts of the epitympanum with certain aims contrary to those methods which do not follow these principles. I should like to name this operation 'a surgical operation, *Κατ' 'ἐξοχὴν*,' et cetera."

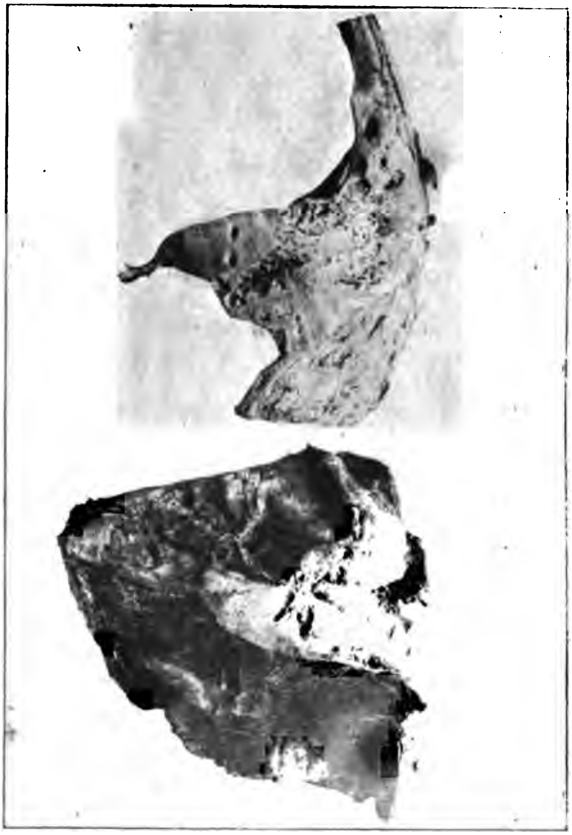

FIGURE III.—Horizontal section through specimen showing the radical operation. Prepared by author.

Stacke answers **Zaufal**: "We cannot very well call a method of operation which is proven already to be sufficiently practical an 'unsurgical' one, as **Mr. Zaufal** has done, apparently, in order to secure for his own method the name of a 'surgical' one. It cannot be called unsurgical because it proceeds from the inside to the outside by following the same way which has been taken by the suppuration itself, and because **Mr. Zaufal** regards it as a difficult technical performance on account of what he names, 'narrow conditions of space.' I must dispute, however, the difficulty blamed, because even if we are embarrassed by the narrowness of the bony meatus we can always make sufficient room by gradually chiseling away backward and upward. An operation cannot be called unsurgical because it is technically difficult, especially if this is only individually felt. Not more so the operating from within outward, because the point at which the operation on the bone begins is entirely laid open by a recognized surgical preoperation. Thus, we cannot speak of operating in the dark, et cetera."

The radical operation was the subject of a very instructive symposium at the last international otologic congress in London[11]. **McEwen**, of Glasgow, I may mention, opens the antrum mastoideum at the base of the fossa supra meatum; afterward he opens and thoroughly cleanses the aditus ad antrum and the tympanic cavity. Further steps depend upon the extent of the process.

(6) *Prepared Specimens.*—Among the specimens which I present to you, a number show the topographic anatomy of the ear, others show the mastoid operation, and again others show the radical operation. Of some specimens photographs have been made for me by **Doctor Preston M. Hickey**. Figure 1a and figure 1b are pictures of decalcified organs; figure Ia a vertical cut; figure Ib a horizontal cut, both showing the meatus, the tympanic cavity, the epitympanum, aditus ad antrum. antrum, et cetera. Figure II shows the picture of a specimen which has been prepared in order to demonstrate the mastoid operation. Figure III shows the radical operation.

Several specimens demonstrate the various steps of the Stacke operation. The lateral wall of the epitympanic cavity is first removed, then the antrum is opened from the meatus, et cetera. In doing so a special instrument, Stacke's protector, is used. We see that the final results of the different methods are the same.

Conclusion.—Operations on the ear are not showy; even the assistant does not see so much as in many other operations. On account of the structure of the ear great caution is required in performing an operation, so we frequently find general practitioners and quite a number of oculists who speak with a feeling of fear, impatience and disgust of the treatment of diseases of this organ; and yet diseases of the same may lead to the impairment and destruction of one of our higher senses, and to death.

Perhaps with the exception of the surgery of the accessory cavities of the nose and of the sinus frontalis, the general views in regard to operations on the ear are rather strange compared with the views concerning other operations. If, for instance, we consider the rapidity with which the operation for the diseased appendix has been recognized by the profession in general, and even by the public, who regard delay in operation under certain circumstances as almost criminal, we must acknowledge that faith in early operative interference in diseases of the ear is gaining ground slowly. The reason for this can be found in the fact that diseases of the ear are not taught with the necessary thoroughness, and that the combination oculist and aurist still exists in many parts of the country.

The patient comes to the physician to be cured, if possible; he has not been asked whether he prefers an affliction of the ear or of the appendix. The physician should not find any excuse for noninterference because of the fact that he is unable to care for the patient properly. Unfortunately, an expression has been invented lately, which we should prefer to be without, namely, the personal equation of the surgeon. This "personal equation" is intended to excuse the noninterference in cases requiring interference, if the physician is unable to operate. Nothing is more dangerous than an excuse based on hypothetic and unscientific reasons under such plain and simple circumstances. I am glad to say that conditions are beginnig to change.

Aural surgery, born in the eighteenth century, disregarded and forgotten in the first part of the last century, was revived in the middle of the same, celebrated its triumphs toward its end and, undoubtedly, will benefit mankind more than ever before in this century of ours into which we enter so hopefully.

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270 Woodward Avenue.

THE NONSURGICAL TREATMENT OF DISEASES OF THE MIDDLE EAR.*

By EUGENE V. RIKER, M. D., Detroit, Michigan.

[Published in The Physician and Surgeon exclusively]

The middle ear, lined as it is with mucous membrane some parts of which are richly supplied with secreting glands and containing in its cavity a chain of bones articulating very delicately one with another, is frequently involved in inflammation; and as perfect hearing depends upon each one of these various parts performing its functions correctly, the wonder is not that there are so many who are hard of hearing, but rather that as a whole we hear as well as we do. This inflammation may be acute in character running a comparatively rapid and mild course to recovery and consequently requiring very little treatment at the time; or it may be severe from the start accompanied by great danger to life and permanent impairment of hearing, and if the patient survives the acute attack, may gradually pass into a chronic condition; or the inflammation may be chronicly inclined from the first, producing various results depending upon the nature of the infection and the parts involved.

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*Read before the Detroit Medical Society.

If the Eustachian tube is involved in the inflammation causing a closure of the tube, inflation should be performed. When Valsalva's method or Politzer's air-bag fails to open the tube, the Eustachian catheter may be passed and inflation accomplished by this method. Before attempting to pass the catheter the nares and the pharyngeal opening of the tube should be thoroughly cocainized and the pharyngeal opening cleansed of any mucus that may be present, by means of the cotton-tipped applicator bent in the shape of the Eustachian catheter. The inflation should be gradual, beginning very mildy and gradually increasing the force until the drum resumes its normal position, as forcible and sudden inflation would produce pain and often extreme dizziness. It would seem almost needless to add that all the details necessary to thorough antisepsis should be observed, as any carelessness in this respect might cause serious and even fatal complications. When the Eustachian tube alone is involved inflation causes instantaneous relief which will last for several hours when the symptoms are apt to return and the treatment must be repeated. If inflation causes any aggravation of the symptoms it should be discontinued and other treatment instituted. After inflation the pharyngeal opening of the tube should be treated with astringents, using such as our experience teaches us to be most beneficial for the case in hand. I frequently use a solution containing iodin in a nebulizer, and in this manner medicate the entire length of the Eustachian tube and the middle ear.

One of the first things demanded of the physician by a person suffering from acute inflammation of the middle ear is the relief of pain. If seen at the commencement, the patient should be put to bed, a saline cathartic administered and dry heat applied, and if there is no contraindication a dose of some of the coal-tar products may be given, but moist heat, oils of all kinds and all aqueous solutions should be avoided. I know that some recommend aqueous solutions of cocain, atropin and morphin, alone or in combination, but I cannot see how they can be absorbed when the drum is intact, for I have never been able to render a nonperforated drum insensible, even when there was no marked inflammation present, by the use of the strongest solution of cocain. When the alkaloids are not absorbed, the relief, if there is any, is due to the heat which is far better applied dry, for when water is poured into the ear and allowed to run out immediately, some is sure to remain in the depression in front of the drum, and thus acts as a poultice which favors the breaking down of tissue and rupture of the drum. Leeches applied in front of the tragus are often beneficial, but in my experience cannot always be used unless the patient is in a hospital. Opium in my opinion should seldom be used, for it is not possible at the outset to tell the nature of the infection, whether it will be a simple catarrhal inflammation with mucous secretion, or purulent with possible mastoid involvement, in which event it might mask the symptoms until it is too late for successful operative interference.

As to the method and time when paracentesis of the drum should be performed, I will simply say that if relief does not come speedily from these simple measures I favor its early and free opening. After spontaneous rupture of the drum a careful examination should be made and the opening enlarged if it is not sufficiently capacious for free drainage, after which the treatment is the same as after paracentesis.

The nose and pharynx should receive special attention, and any abnormality, which interferes in the least with free nasal respiration or produces congestion of the vessels of the pharynx, should be corrected.

We have been considering acute inflammation of the middle ear only, but there are a vast number of persons suffering from chronic hypertrophic or hyperplastic inflammations of the middle ear which are the result either of neglect or of bad management of acute affections, or occur without the organ ever having been the seat of an acute inflammation, and it is this class of persons who often go from one physician to another and receiving very little, if any, encouragement, drift into the hands of quacks and numerous patent ear-drum impostors only to be relieved of their money and are often very much injured. Are we, as physicians doing all we can to relieve this class of cases? Is it not frequently said that this or that patient inherits deafness, that it runs in the family, and consequently there can be nothing done to relieve him? I admit that this class of patients appeal very strongly to my sympathy, for nearly all complain of subjective noises, often so annoying as to deprive them of sleep, and on account of the strain on the nervous system in endeavoring to hear they are easily fatigued. Imagining that people are talking about them, they shun society and become discouraged and melancholy. I think we should be exceedingly careful in expressing an unfavorable opinion to such patients, and, before doing so, we should be sure that the disease has passed beyond all hope of improvement. If the ears are still in the hypertrophic stage of inflammation we can often give relief by removing as far as possible the causes which have produced the condition. Among the most frequent causes are adenoid vegetations in the vault of the pharynx, enlarged pharyngeal tonsils, hypertrophied turbinated deflected septum, any condition interfering with free passage of air through the nostrils, or producing engorgement of the vessels of the pharynx. If the Eustachian tube is involved it should be treated as previously explained. If fluid has accumulated in the middle ear, it is better to attempt emptying it through its natural drainage—the Eustachian tube—by means of inflation. This failing, the drum should be opened, after which inflation with absorbing and stimulating vapors should be practiced together with mild massage of the drum which helps to absorb any exudate and keeps the articulations from becoming ankylosed. One of the best instruments I have seen for this purpose is one recently invented by DOCTOR HAROLD WILSON, of this city. This instrument has many advantages and it would well repay anyone interested in this line to investigate it. It is usually necessary to continue treatment for some time, and patients should be cautioned not to neglect any cold that in the least affects the ears. In this manner we are usually able to benefit the hearing and can at least keep the disease from passing on to the hyperplastic form with plastic exudation and ankylosis and binding down of the bones of the ear.

When dealing with the hyperplastic condition with atrophy, immobility of the ossicles due to contracting and binding down of the organized exudate, very little can be done by treatment except to operate and remove the malleus and incus and mobilize the stapes, and while this does not properly belong to the nonsurgical treatment I cannot refrain from quoting from Edward B. Dench, in the "American Text-Book of Diseases of the Eye, Ear, Nose and Throat," who says, "Middle ear inflammation upon one side usually leads to impairment of hearing on the opposite side. From a number of my own cases I am convinced that the relief of increased tension in the conducting apparatus upon one side, either checks or retards the involvement of the opposite organ, and in many cases improves the ear not operated upon. My own results under cocain anesthesia are as follows: Of sixty-four cases operated upon, thirty-two were greatly improved, twenty-four moderately improved and eight unimproved. In three of the cases in which no improvement followed the operation I should say that I performed an explorative operation only. In one instance when functional examination seemed to show extensive labyrinthine involvement the hearing was notably improved, not only in the ear operated upon but also in the opposite ear."

There are other aurists, I think perhaps they are in the majority, who condemn the removal of ossicles in this disease, and think this operation should never be performed, in the belief that it does no good to the hearing and exposes the mucous membrane of the middle ear to direct contamination from the atmosphere, thereby being a constant source of danger. My experience, though limited having operated upon only ten cases, agrees almost exactly with that of Dench, and I feel that any operation is justified if fifty per cent. of the patients can be greatly improved and the remainder are only slightly inconvenienced.

THE CAUSE OF FAILURE AFTER CLUB-FOOT OPERATIONS.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

The subject chosen for the few remarks which are contained in the short paper of this evening is one that has frequently been discussed. I was prompted to choose this subject because I battled with this deformity some years ago more than with any other embraced in orthopedic surgery and must confess to having been frequently vanquished.

My own disappointment and that of my patients or their relatives and friends have left a decided impression upon my mind. When one has met with failure after failure in the treatment of any deformity, he is apt to become skeptical in regard to the efficacy of the methods employed. The fault may be his, he may fail to properly apply the method of treatment; be that as it may, it, nevertheless, has the effect of making him look for and adopt some means of relief which seem more promising.

Many still continue to treat and cure club-foot cases by subcutaneous section, others resort to what is known as the open method. The latter has renewed my courage in treating inveterate cases of talipes varus.

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*Read before the Wayne County (Detroit) Medical Society.

With the exception of the skin, which is frequently a serious obstacle to the proper correction of the deformity, a dexterous operator may divide subcutaneously all the structures that are divided in the open operation, but the great danger of adopting the subcutaneous method is that something may be left intact that should be cut to obtain the end desired.

After lowering the heel by section of the tendo Achilles and severing the posterior ligament of the ankle-joint if necessary, the surgeon is confronted with the task of turning that part of the foot in front of the mediotarsal joint outward and bringing the plantar surface downward. To accomplish this it is necesarry to divide certain structures which offer resistance, and even after all the structures are severed which are advised to be cut in the Phelps' operation, there is still strong resistance to the correction of the deformity. Those who possess the necessary instruments, such as the Grattan osteoclast or some other variety of wrench, can by main force complete the rectifying process by tearing the resisting structures, but this is done at the expense of a great deal of crushing of the foot and consequently a much longer time is required for recovery.

I have for some years taught my classes that the open operation would prove a failure in their hands if their incision did not open up the mediotarsal joint; that it will not suffice to sever only those structures which text-books advise should be cut in that operation; that we must cut the astragaloscaphoid ligament and in some severe cases the plantar ligaments also. Unless this is done the anterior part of the foot is brought around with difficulty, and when the splints are removed the foot will be apt to relapse into its vicious position. It is of the utmost importance that the incision in the mediotarsal joint should be continued until, if necessary, we reach the outer border of the flexor brevis digitorum muscle, when it should stop in order to avoid severing the external plantar artery. If resistance still offers, the remaining structures can readily be broken with the hand. When the wedge of new tissue is interposed between the bones forming the inner half of the mediotarsal articulation it is almost an impossibility for the deformity to recur.

If the patient has arrived at the walking period, it has been my observation that it is not necessary to keep him under observation for the ordinary length of time—several years. The weight of the body in that case helps to keep the member in the corrected position so that the patient can safely be dismissed shortly after the deformity has been corrected. The ordinary methods for developing the weakened muscles should be resorted to and those will be found to be much more effectual if the foot can be trusted to retain its place without the application of mechanical appliances. When I discharge my patients after operating by the open method, I have for some years been able to get along with an ordinary shoe, and my relapses have been very few.

I have seen an operation done in which the operator thought he was performing the Phelps' operation, wherein the heel was not sufficiently brought down after section of the tendo Achilles when the deltoid and astragaloscaphoid ligaments were not cut and when an effort was made to bring the foot around to the corrected position after only the tendo Achilles, anterior and posterior tibial tendons, and the abductor pollicis muscle were severed. In such cases, as the foot is brought around with a great deal of difficulty, the deformity cannot be overcorrected as it should be, and after the dressings are removed it is sure to recur. After an operation performed in this manner I have seen feet relapse before the plaster was dry.

Many objections have been urged against the open operation among which may be mentioned, the fear of the occurrence of flat-foot, the danger of the skin at the edges of the wound rolling in and leaving a painful condition, and the existence of a tender scar after granulation has taken place. All these objections in my cases have been found groundless. When relapses occur it will usually be found that the open operation has been improperly performed; some of the resisting structures have been left intact. Some surgeons have been profuse in denouncing the open operation on general principles, but I doubt if they are prepared to offer us anyhing better or more effectual.

THE MANAGEMENT OF TRACHOMA.*

BY CHARLES H. BAKER, M. D., BAY CITY, MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

TRACHOMA is a contagious disorder of the eyes produced by a micro-organism, the growth of which causes the development of rounded granules in the conjunctiva. That the disease is contagious is undeniable. Its presence so often among soldiers crowded in barracks; lumbermen in camps; inmates of almshouses; and among members of a family, from using the same towels and basins and beds, proves this assertion. SATTLER claimed to have discovered a diplococcus smaller than the gonococcus, both in the granules and in the secretion, which in a pure culture would produce the disease in human eyes. His theories, though denied by some, have been confirmed by many good observers; and treatment, applied in accordance with the discovery of this investigator, has proven most successful in controlling the disease. There is much variation in the descriptions and divisions of trachoma as made by different authors. Some make two general classes, follicular conjunctivitis and trachoma proper, claiming that the different results of treatment under the old methods demonstrate two distinct affections; others subdivide still farther and describe different stages of the same disease which may be either acute or chronic from the first. A complete description of the clinical appearances of trachoma may be found in any general work on diseases of the eye, and the only reason for discussing the etiology and diagnosis in the present article is that the difference and the reasons for the different management may be apparent.

Treatment, according to many early and some late writers, is of two kinds; first, soothing, applicable in the acute stage and in exacerbation, to allay irritation and reduce excessive inflammation; and second, stimulating, suited to the chronic stage, for the purpose of inciting sufficient inflammation to cause absorption of the granulations through the lymph channels and the blood. According to the newer theory of a direct contagious element, antiseptic treatment is required, and therefore, each case should be managed on the principle of securing removal of the irritative cause, after which the conjunctivæ should be thoroughly disinfected.

The whole matter is thus simplified. Trachoma is only one disease, and may be either acute or chronic. It is of germ origin and consequently requires antiseptic treatment.

In the acute stage pain and smarting can be relieved by the use of a two to four per cent. collyrium of cocain and boric acid, being careful to use crystallized cocain hydrochlorate. The collyrium tends to shorten this stage, both by the mild antiseptic and astringent action of the boric acid and by the contracting effect of the cocain on the engorged blood-vessels. The patient may also apply to the lids a saturated solution of boric acid—either very hot or very cold. Once daily the surgeon should evert the lids and apply to the conjunctiva with considerable friction a solution of chlorid of mercury, one to one thousand or one to six hundred strong. A pledget of cotton twisted on an applicator is best for this purpose, absorbing the excess with another damp pledget.

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* Prepared for the BAY COUNTY MEDICAL SOCIETY.

Excessive pain will be prevented if an eight per cent. cocain solution is dropped into the eye before the application of the sublimate. The friction, if sufficiently forcible, will in this stage usually cause a slight capillary oozing which is beneficial for reducing congestion. Before granulations have distinctly formed this is all the treatment necessary and prompt results may be confidently expected in six to twelve days.

Some cases will pass into the chronic stage in spite of remedial measures, and together with those first seen in this stage will be considered under the second division of treatment. The presence of distinct granules in the conjunctiva marks the advent of this stage, whether it is the sole pathologic change, or the disease has advanced until cicatrices have formed or papillary enlargements occur, or there is pannus, blepharospasm, et cetera.

The granules, which are nests of germs, must be emptied. Several methods are in vogue for this purpose, as picking open with a broad needle, thermo- or galvanocauterization, scrubbing with a stiff brush, grattage, and expression with the finger nails or with different kinds of forceps. Whatever method is employed for emptying the granules this must be thoroughly done. After having tried the various processes the writer has found Knapp's roller forceps the best, both because of the possibility of reaching all the granules and because general anesthesia is not required. The conjunctiva is well anesthetized with an eight per cent. cocain solution and the contents of all the granules evacuated, paying especial attention to the retrotarsal fold, the angles of the lids and the lower culdesac. As soon as emptied, scrub the lids thoroughly with cotton twisted on a probe and saturated with a one to three hundred solution of bichlorid of mercury, removing the excess with a moist pledget There is seldom much reaction from this strong solution—such as occurs being controlled by cold compress and bathing. Most patients, however, declare on their next visit that their eyes have not been so well for weeks. For the next week or ten days, the everted lids are scrubbed daily with one to six hundred bichlorid solutions, the patient using the cocain and boric acid collyrium, before mentioned, to control irritation. Except in severely complicated cases, the above treatment perfects a cure in two to three weeks. Sometimes expression must be resorted to a second or third time—in fact, as often as granules occur.

The promptness with which severe pannus and papillary thickening of the conjunctiva usually disappear under this management is a revelation to one who is only familiar with the slow improvement obtained by the use of nitrate of silver, sulphate of copper, lead, tannic acid, et cetera. Since adopting the bichlorid treatment with expression, the writer has almost abandoned the use of silver and has totally given up copper, lead, tannin or zinc in the treatment of trachoma.

Crapo Block.

THE ETIOLOGY AND RATIONAL TREATMENT OF DISEASE.*

BY GEORGE B. McCALLUM, M. D., MONROE, MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

ANYONE conversant with the practice of medicine will not deny the fact that wonderful advancements have been made in therapeutics in the last one hundred years. More real advancement has been made during this time than in any thousand years before. Even the laity know and speak of this. It would take but a few moments to convince the most skeptical. We cannot fail to notice the fact that all this has tended toward the elucidation of etiology and the simplification of treatment. In the centuries gone by little was known of the causes of disease, and that which was believed to be a fact was the result of the wildest speculation and the treatment was crude and often did more injury to the system than the disease itself.

In the first part of the century JENNER discovered and introduced vaccination, an almost certain preventative of smallpox, that fell destroyer which well-nigh depopulated England and the Continent of Europe again and again.

From 1844 to 1847, we note the introduction in order of nitrous oxide, sulphuric ether and chloroform as general anesthetics, and who can estimate the pain and suffering which their use has prevented?

In 1871, SIR JOSEPH LISTER introduced to the profession his antiseptic treatment of wounds by carbolic gauze and spray, which gave birth to a new era in surgery.

Among the remedies introduced to the profession in 1870, we may mention eucalyptus globulus, cocoa, grindelia robusta, yerba santa, rhamnus prushiana (cascara sagrada), berberis aquafolium, kava kava, jaborandi, Jamaica dogwood, and manaca, many of which have become invaluable in the treatment of different diseases.

In 1883, antipyrin was prepared by L. KNORR, and soon came into general use. This was the first of the coal-tar products. It was followed in rapid succession by acetanilid in 1886, phenacetin in 1887, and sulphonol in 1888. It is almost impossible to estimate the benefits derived from these drugs in the relief of pain, fever and sleeplessness. The effect is prompt and effective with little injury to the system if properly administered. They have nearly superseded the use of opium and its derivatives, and have placed in the hands of the physician a means of relieving pain with little danger of the formation of a drug habit. This review would not be complete without the mention of cocain, that wonderful local anesthetic that has made it possible to perform many minor operations without the production of general anesthesia, which is fraught with so much danger; and iodoform, the surgeon's tried and true friend for more than fifty years; and also salicylate of soda, that blessed boon to the rheumatic.

Old remedies have been carefully studied and analyzed; many new derivatives and combinations produced; the lethal and therapeutic effects proved upon the lower animals; and every effort made to rescue materia medica and therapeutics from empiricism, and to establish these branches upon an intelligent basis. Need I take your time in trying to prove to you that this, to a great extent, has been accomplished and that the time has come when a physician prescribing a remedy for a symptom or a disease can give a reason for doing so. Of course, I admit that much yet remains to be done in this line, but the work is advancing with great rapidity.

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* Read before the MONROE COUNTY MEDICAL SOCIETY.

Time will not permit speaking of the discoveries and advancements in physiology, pathology and sanitation, and of the x-ray.

We now come to the most important discoveries of the century, which have done much to establish etiology and therapeutics upon a solid foundation. I refer to the advancement in bacteriology made during the last twenty years.

In 1866, DOCTOR SALISBURY, of Cleveland, Ohio, began his microscopic researches to find the cause of malaria. This work was continued by KLEBS, and TOMASSI-CRUDELI who made announcements in 1879. LAVERAN, in 1881, published the discovery of what he called osicillaria malaria, which proved to be the true cause of malaria. It is now called malaria plasmodium, and is a protozoa found in the blood of those suffering from malarial fever. In the same year EBERTH, of Zurich, described the typhoid bacillus. The following year DOCTOR KOCH, of Berlin, first described the bacilli tuberculosi, the cause of lupus, scrofula and tuberculosis. In 1883, the Klebs-Loeffler bacillus, the cause of true diphtheria was observed by LOEFFLER and described by KLEBS. In the same year DOCTOR KOCH announced his discovery of the comma bacillus, the bacillus of Asiatic cholera. The discovery of the bacillus of tetanus was anuounced by RESENBACH, described by M. BONOME and isolated by GIORDANI in 1887. This was followed by the discovery of the plague bacillus by KITASATO and YERSIN in 1894, and by the bacillus of yellow fever, in 1897, by SANARELLI. Similar discoveries have been made pertaining to pneumonia, bronchitis, influenza, dysentery, scarlet fever, measles and smallpox. In fact, almost every diseased process in the system is now attributed to a microbe.

Having established the fact that the cause of almost every disease is a microbe, it would seem as if all that remains to be done in regard to treatment is to discover some remedy which, when administered, will cause the death of that particular microbe, whatever it be, without injury to the system. To all appearances this goal has been reached in diphtheria by the discovery of the fact that the serum of the blood of a horse that has been repeatedly inoculated with diphtheria toxin, if injected under the skin of a patient suffering from diphtheria will arrest the disease, and if injected before the disease has begun will prevent it. This has been established clinically beyond all controversy. Similar efforts have been made with reference to other diseases and with results which, though encouraging, fall far short of the brilliant results of diphtheria antitoxin. Most physicians, however, believe that we have struck a vein which will finally lead to that long-sought goal—the establishment of etiology and treatment upon a rational basis. Far be it from me to belittle in any way these researches and the results of these wonderful discoveries. Those who have been laboring in this direction have been abundantly rewarded for all their efforts by present results. Their names will be handed down to posterity, written high on the pinnacle of fame, and the indications are that their efforts will be crowned with still greater success in the future.

There is another view of etiology and treatment, which promises to yield abundant fruit to those who will develop it. The real causes of disease are not from without but from within. The system must be reduced by some other cause before the deadly microbes can begin their work. The healthy organism has the power of resisting these intruders and until this is overcome they are inert. Let me call your attention to a few causes of disease which are generally ignored or overlooked in treatment.

There is not the slightest doubt that three-fourths of the medicine used is unnecessary. There is an enormous amount of patent medicine consumed every year, and this consumption is rapidly increasing. People learn the names of the remedies prescribed by the physician and prescribe for themselves, or they keep copies or the numbers of the prescriptions and renew them as often as they see fit. Also, there is no question about most physicians giving far more medicine than would really be needed, if a careful inquiry into the cause of the disease were made, and if some change in diet or in habits were prescribed. This overconsumption of medicine is becoming a serious matter, and many acute and chronic diseases are caused or confirmed, directly or indirectly, by it. It is the duty of every physician to do all in his power to combat this tendency and to advise and encourage other means than medicine as much as possible for the cure of disease.

Overeating is no small factor in the cause of disease. The appetite is stimulated and tempted by mustard, pepper and flavorings. The food is washed down with tea, coffee and water, and that delicate monitor, the appetite, is ignored. No wonder that indigestion is such a prevalent and obstinate disease to relieve, and it will remain so until the real cause is recognized. Maltine, pepsin and pancreatin are only temporary expedients, as also are hydrochloric acid, phosphate of soda and bismuth. The amount and kind of food and mode of taking it must be prescribed. The organ of taste or the appetite must be restored and strictly obeyed. Nothing to stimulate it should be taken. The food should be masticated thoroughly and mixed with the saliva. Liquids should be taken between meals with exercise and little taken during meals. A little jelly or fruit will cause the saliva to flow and will do no harm. Strong tea and coffee should be avoided. This will give the stomach a rest, and when it has regained its tone the appetite will again become normal.

Improperly cooked food is the cause of a great deal of sickness which no medicine will cure until the cause is removed. Young ladies are taught to play the piano, to draw, to dance, but the majority of them do not know how to cook a meal properly. What is the use of trying to cure stomach disorders when carelessly prepared food is regularly ingested? I am satisfied that very few people realize what an important factor this is in the cause of disease. Nine-tenths of the diseases of the human body begin, directly or indirectly, in the digestive organs. Let these become disordered and the keystone of health is removed; the entire body is deranged and becomes a prey to malaria, typhoid fever, diphtheria and malignant disease. The only way for the physician to overcome the effects of this evil is by prescribing a diet and a mode of cooking. The way to prevent it is to teach the culinary art in the daily schools. This is being done in some places and I hope will soon become universal.

The next cause is the lack of sufficient liquid in the system. This condition is generally brought about by habit, by the want of sufficient exercise to create a demand for liquid, or by nonabsorption of liquid from the stomach and intestines. Some people are in the habit of taking no liquid between meals and very little at meal time. It can easily be seen what the effect will be. Nature manages to subsist on the nutriment received, and as there is not sufficient fluid to carry on all the functions of the body properly and also maintain a good circulation on the surface, most of the blood is collected around the internal organs where it is most needed and as a result the surface looks pale and anemic and slight exposure causes a rush inward of the little blood there is on the surface, which, by engorging the internal organs still more, results in congestion and chronic inflammation. Not a function in the body is carried on properly. The urine is usually scanty but at times the kidneys become very active and reduce still more the little liquid in the system. There may be either constipation or diarrhea. The stomach becomes weak and the appetite poor. Various nervous symptoms develop. In short, the entire system is disordered and almost any form of disease may result. It is in just such cases that bathing, cold water drinking and regulated exercise will produce brilliant results. Of course the treatment must be begun carefully, the temperature of the bath gradually reduced and the amount of water and exercise gradually increased. Vigorous exercise in the open air if possible, at least once a day, of a kind to bring into play every muscle in the body, and continued until reaction is produced, is necessary to maintain the health of the body. Some employments will produce this result but most will not. The best time to take this exercise is early in the morning before breakfast. The object is to cause a reactionary flow of blood to the surface, which being maintained there throughout the day, will relieve the internal organs and prevent any tendency to their congestion. There are two systems in the circulation of the blood; the circulation on the surface of the body and the circulation in the internal organs. A proper balance should be maintained between these like the balance of a pair of scales. A vigorous circulation of blood on the surface is the outer bulwark of the system. Weaken this and we become a prey to coryza, pharyngitis, bronchitis, pneumonia, et cetera. Many times these diseases can be aborted by hot drinks and heavier clothing, thus restoring the circulation at the surface. Many cases of incipient pulmonary tuberculosis, chronic diarrhea, indigestion and constipation can be cured by properly regulated exercises, cold water drinking and baths.

Heavy, stiff, impervious fabrics and improperly fitted clothing are a fruitful source of disease. The whole system of tailoring is wrong in a hygienic sense. In the first place most of the cloth used in suitings for men is too heavy. The only purpose of clothing should be to regulate the loss of heat from the surface of the body. Heat is a product of combustion in the body and when more is retained than is needed to keep the body at the normal temperature it has a depressing effect upon the heart, the circulation and the nervous system. Stiff, impervious fabrics have an irritating effect upon the nerve-endings in the skin, and interfering with the insensible perspiration, by reflex action cause headache, neuralgia, palpitation, et cetera. The cut and form of garments worn by men at present are far from being hygienic. The surface of the body should be more evenly covered. There are six to ten plies of cloth around the hips and waist, whereas there should be only two or three at the most. This causes congestion of the lower bowel and bladder; and diarrhea, constipation, hemorrhoids and various kinds of bladder disorders result. Clothing should also be loose. There should be no constriction or uneven pressure on any part of the body, for this, besides injuring the organs beneath, will interfere with the blood-current and with the circulation of air between the surface of the body and the garment.

No physician will question the fact that certain conditions of the mind will produce a depressing effect upon the functions of the body, and if long continued will cause acute or chronic disease. How many times we see insomnia, nervous dyspepsia and diarrhea caused by worry, nervous excitement or shock. Sometimes more serious troubles will result, as chorea, neurasthenia and insanity. The condition of the mind also determines to a great extent the length of a course of disease and the result. How many times is recovery retarded or even prevented by worry about business and finances and loss of hope of final recovery. Then again there are diseases which are purely of imaginary origin. Some people will assure you, and they really believe it, that they have dyspepsia, some obscure liver trouble, or that by youthful indiscretion or sexual excess they have ruined their health for life, when in reality they have no disease at all. These are the cases in which Christian Science, Dowieism and mental healing attain their most brilliant results.

I have called your attention to only a few of the common or simple causes of disease and have given but a mere outline of these. This will serve solely as an introduction to a subject which is vast in extent and includes all the details of human life. Some may be tempted to look at these causes as insignificant and only secondary or contributory, but do not let the simplicity of the subject deceive you. It is demonstrated to my satisfaction that nearly all diseases originate in this way. Late one fall, a number of years ago, I was treating an obstinate case of diarrhea. After successive improvements and relapses had continued for weeks I one day learned that the patient was wearing light summer gauze underclothing. I at once ordered a change to wool and soon after my services were dispensed with. I remember at one time while I was attending college in Ann Arbor, a patient with an eczema of the forehead presented himself at a clinic conducted by **Professor Dunster**. On examining the patient's hat, the doctor noticed a discolored patch in the leather band which was due to some defect in the process of tanning, and it was found that the irritation of the skin produced by this patch had caused the eczema. A simple cause, but we cannot estimate how obstinate the case might have become had the discovery not been made. Numerous instances could be cited of just such simple things having originated and prolonged serious diseases. This may not be apparent when the disease is far advanced and other causes have come into play, but if careful inquiry be made, especially at the beginning, the truth of this assertion will be confirmed.

I do not wish to be understood as condemning the use of drugs, but I do say that far more are used than are necessary. If the common causes of disease were sought and removed, many times nothing more would need to be done. In other cases, some simple treatment as regulation of diet, properly prescribed exercise, or changes in apparel would be needed. Then there are kernels of truth in hpdropathy, the Swedish movement cure, hygienic treatment, and even in mental science, which we would do well to appropriate in the treatment of some cases. Of course, often at present, a disease cannot be successfully treated without the use of medicine, but as this subject becomes more fully developed such cases will diminish. Every careful reader of medical literature must notice the strong tendency of our best men in the direction which I have indicated.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, DECEMBER 12, 1900.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.

REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

Doctors Donald S. Campbell and **Preston M. Hickey** read papers on "The Predisposing Causes of Pulmonary Tuberculosis" and "The Early Diagnosis of Pulmonary Tuberculosis." (See pages 151 and 157.)

Doctor Henry J. Hartz: Upon the tubercular diathesis the leading writers of today are divided. Why is tuberculosis so general? One reason is that a large number of persons who have tuberculosis acquire it by taking the tubercle bacillus in their food, drink, et cetera. What the cell is no one knows, but we know that there is a germ and if that germ can be kept away from the soil there will be no tuberculosis. Seventy-five per cent. of all people are tubercular. From where does this infection come? It can only come from without.

Doctor Peter M. Campbell: In making X-ray examinations I often notice that what was in many cases very plain in the early stages of the disease becomes obscure in the later stages. The reason for this, I think, is that the shadow shows more plainly in the first stage of the congestion than after it has continued for some time. The incursion of the diaphragm, I think, is usually the easiest to see. It can be seen with any kind of tube and is really of more value than the shadows. The history of the cases and the other means of diagnosis should, of course, be used at all times. With some cases referred to me by other physicians, I have endeavored to prove to the satisfaction of the profession that there is something in the X-ray examination. I asked the men who brought patients to me to make a careful examination of the chest and jot down what they found. I then asked no questions, but proceeded to make an X-ray examination. Sufficient time has not yet elapsed to be able to tell the exact results, but I think that in at least sixty-five per cent. of the cases in the early stages, I succeeded in making a correct diagnosis with the fleuroscope alone. It is a peculiar fact that not only are the shadows fainter in the late stages of the disease but the diaphragm seems to improve. When only one side is involved I have seen the diaphragm make an incursion of perhaps two and one-half inches on one side and about one and one-fourth inches on the other. In such an event there is a disease of the lung and if we then differentiate between tuberculosis and the other pleurisies and pneumonias, we can be almost certain of making an exact diagnosis.

Doctor Gibbes: If we examine the lungs carefully taking into consideration the morbid changes, we find that several conditions may be brought about in the early stage of tuberculosis. These vary so much that they are distinctly different processes and require different methods of diagnosis. We are all familiar with the inflammatory change beginning with bronchitis, passing down into the lungs and forming there a consolidation which, vitality not having the force to throw it off, becomes solidified and liquified and is discharged through the bronchial passages.

There occurs an inflammatory change, consolidation of the lungs, and whether that clears up or not depends upon the amount of vitality possessed by the patient as well as upon the size involved; that means an inflammatory change all through. Many persons who have been erect begin to stoop. As the new tissue forms the stoop is to ease the apex of the lungs and relax the muscles. It is done instinctively. In these persons we find a consolidation of the apex of the lungs. In another form, acute miliary tuberculosis, a different condition is present. Both lungs are filled from apex to base with small tubercles and the patient dies without any expectoration, the acute stage lasting only about twelve or fourteen days after the patient is seen. In many of those cases it is impossible to make a diagnosis during life. That miliary tuberculosis of the lungs is absolutely incurable is the opinion of the best men of the day.

Doctor Duffield: I have frequently used the pulse as an aid to diagnosis. It usually rises after two o'clock every afternoon and falls again by nine. I have also considered the deep inspiration when followed by a hacking cough which may continue for several months without change. I have been led to use something for the early diagnosis that I do not hear mentioned tonight: that is, I make a test case of each one who shows these symptoms, using ten minims of the watery extract of the tubercular bacilli as prepared by Paquin the first day and noting the temperature every half hour. There is a rise of temperature if the disease is tubercular, but if it is not there is no rise whatever. If the affection is in its incipient stage, the temperature often rises as high as 103° remaining stationary for three or four hours, and then recedes to normal.

Doctor Warren: It seems to me that it has yet to be proven by means of pathologic work that there is such an intimate relation between the diseases scrofula and syphilis. I should be inclined to think that scrofula, when the glands are enlarged, is more of the nature of a tuberculous than of a syphilitic condition and much more closely related to tuberculosis than to syphilis.

Doctor Shurly: That syphilis may be and often is a predisposing cause of tuberculosis, I think there can be no doubt, but *how* often is, of course, a question. The other points that Doctor Campbell brought up are certainly very practical ones. The view taken by Doctor Hartz is the modern one, the one that the majority of persons accept, and, of course, we cannot go into any detailed discussion of that part of the subject. In all my experience with traumatic diseases of the lungs, gunshot wounds, et cetera, I do not know of a single case which terminated in tuberculosis. I believe this disease to be a degeneration. I do not think that there has been a case on record wherein the tubercle bacillus has penetrated a normal membrane, neither do I think it necessary to have laceration as the germs do not always find a field for growth in such conditions, but in certain portions of the body there are tendencies toward cellular degeneration. Of course, I must dissent from the assumption that every case of tuberculosis is the result of degeneration. If in following up the clinical history of a case we can find no evidence of the patient having been exposed, we have no right to say, excepting by assumption, that the disease developed from the inhibition of germs from the outside. Just where these germs come from no one knows. In some cases tuberculosis is a secondary affection. We have other cases in which it is primary. In regard to Doctor Duffield's remarks about the tubercular test, I regret that I have not used it. We have not gone far enough yet with the X-ray test, but if DOCTOR CAMPBELL will continue his good work, I think it will be of value. The radiograph must be developed as an art.

DOCTOR OWEN: I should like to know how to proceed at first when making a diagnosis. Sometimes the diaphragm rises; other times it does not. One portion of the lung is sore and another portion is not. What are we poor fellows who have not the technique to do? Are we always to send our patients to a surgeon, or are we—as is practically told us tonight—always to send them to a lung specialist? I, myself, do not know what to do in such a case. I usually pronounce the disease tuberculosis. That is the easiest way out of the difficulty, as we can then always give treatment

DOCTOR McCLINTOCK: I cannot believe that tuberculosis is so definitely connected with syphilis. The fact that syphilis is not a disease of any of the lower animals and that tuberculosis is found in many, it seems to me, proves that the two cannot bear the relationship of cause and effect. That syphilis may predispose to tuberculosis we cannot doubt. Anything that has an exhaustive effect may predispose to the disease.

DOCTOR DONALD S. CAMPBELL: Most practical men who have had much experience in the treatment of tuberculosis, in a great many instances have seen the connection between it and syphilis. I, myself, have. In regard to the condition to which DOCTOR HARTZ refers, we know that there must be a certain principle in our being, favorable to the growth of the tubercle bacillus; otherwise, its entrance into the system alone could not produce tuberculosis. What is that condition? We know of none of the lower animals that has scrofula and yet there is a scrofulous disease. If there is no condition then, or if the bacilli themselves, which enter into the system, produce this condition, then the bacilli produce the disease and the diathesis produces the bacilli. Of course, I know that tuberculosis is a highly contagious disease; I believe syphilis is also.

DOCTOR HICKEY: It seems as though a great deal of argument about the various conditions that prevail might be obviated if we would only proceed at once to the subject under discussion. If we restrict the term tuberculosis, as we should, to a specific disease, we will then leave out pneumonia and other kindred diseases. It seems to me that it would be best to adhere strictly to such a definition. In regard to the use of the X-ray in the diagnosis of diseases of the chest, I confined myself in the paper to its use as an early diagnostic means. As an aid to confirming the signs of advanced lesions gained by other means, it certainly is very gratifying. With it we can outline cavities very nicely. As a mode of determining the extent of the advanced lesions I think it very satisfactory to have such facilities at our disposal, although as yet we would not desire to replace our better known diagnostic measures with the X-ray.

STATED MEETING, JANUARY 16, 1901.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTORS EMIL AMBERG and EUGENE V. RIKER read papers on "The Surgical Treatment of Otitis Media Suppurativa," and "The Nonsurgical Treatment of Diseases of the Middle Ear." (See pages 160 and 167.)

DOCTOR DON. M. CAMPBELL: The diseases of the ear are extremely important. This subject of ear diseases which has been presented to us tonight is very broad; too broad, indeed, to be considered in one evening. It seems to me that in considering the subject of chronic catarrh of the middle ear we must go a little back of where we usually start at present, if we wish to do absolutely good work. Most persons who come to us with a chronic otitis media, the subject of hypertrophy or hyperplasia, have in their early lives been affected by adenoids or some hypertrophic disease. If these adenoids were brought to our attention early, we could, undoubtedly, prevent the development of a large number of chronic catarrhal otitis media cases, which, when they do come to us, are more or less unamenable. Still, many of the patients who come to us with a chronic catarrhal otitis media well established, if they can be persuaded to undergo a continued and persistent course of treatment, can be materially benefited. The treatment of the pharyngeal space of the nose, of the Eustachian tube, and of the middle ear, through the medium of the Eustachian tube, and especially by the employment of different forms of massage, either the pneumatic massage—compressed air in the external ear by Delstonge's instrument—by Luicke's or other massage instruments, which are used extensively at the present time, a great deal can be accomplished. In considering the catarrhs it seems to me that the two points of essential interest in the treatment of such cases are, the early removal of any growths in the noses and throats of children, and long continued treatment. I think that in treating acute suppuration of the middle ear, the kind of paracentesis we decide to perform depends largely upon the nature of the process in the middle ear. In case of a simple catarrhal inflammation of the tympanic cavity which does not yield to treatment in twenty-four hours, if we can convince ourselves that the mastoid is not involved, a simple paracentesis should be made. When we come to consider the treatment of chronic suppurative otitis media and its complications we have a broad subject before us. As I observe the drift of professional thought in this field, it seems to me that we are constantly coming nearer to the treatment of chronic suppuration on purely surgical lines. The removal of necrotic tissue and the securing of free drainage are the essential parts in the management of the disease. It also seems to me that we should perform these operations earlier than we do. We should operate in the stage of chronic suppurative otitis, and not always wait until mastoiditis or a threatened involvement of the intracranial contents takes place.

DOCTOR FROTHINGHAM: The essayist mentioned no benefits derived from cocain, et cetera. Oftentimes we have found the use of laudanum of much value for the relief of pain. Neither did he mention counter-irritation, as with mustard (not to the point of blistering, but almost to that point), painting with tincture of iodin, et cetera. A serious complication arises from neglect in acute cases wherein the patient has just recovered from la grippe, severe tonsillitis, or scarlet fever, by omitting throat and nose treatment and aseptic washes. I do not believe in using irritating fluid in the nasal pharynx at such times, but mild boric acid solutions in the form of sprays, and cocain are beneficial. For paracentesis I believe in making the incision almost the entire width of the tympanic cavity and instituting free drainage. In chronic catarrh when that condition has been long established and is followed by suppuration, I find great difficulty in making the opening permanent even when the incision extends across the entire membrane. I treated a case this winter in which I had to make seven incisions before I succeeded in establishing free drainage. Again, inflation is often resorted to in case of suppurative otitis media to force the discharge out of the Eustachian tube and in that way secure better drainage and cleaner and more aseptic conditions. I do not believe in inflation in the suppurative form, for there is danger of forcing through the secretions into the antrum and causing serious complications. In regard to nitrate of silver producing paralysis, I think that is due more to the way in which it is used than to the silver itself. In using the stronger preparations, forty or sixty grains, it is always advisable after having secured the action required, to neutralize its effect. In that way I think it prevents continuation of the irritation. The operative treatment of mastoid cases the essayist has fully covered. I always think it is advisable while having the patient under the influence of chloroform to open the antrum. It takes longer to heal, but the safety that is insured, from having to perform a secondary operation and then opening the antrum, makes it much better for the patient.

DOCTOR PARKER: Certainly within the last few years very much has been done for the relief of both the chronic catarrhal and chronic suppurative cases. I formerly regretted to see a case of chronic otitis media, feeling that I could do very little for it, but I have since changed my mind and agree entirely with DOCTOR CAMPBELL. My own routine treatment is, after caring for the nose and throat as much as I am able, if it is a simple case, I always inflate with a catheter. I know that with aural massage — either pneumatic or electric — a great deal can be accomplished. Personally I employ the pneumatic method. In my inflations I use as a neutralizer iodin, carbolic acid, menthol, et cetera, solutions. I want to emphasize the importance of early operation in chronic suppurative cases. If a case continues for one or two weeks there is only one thing that can be done, and that is to perform the radical operation.

DOCTOR RIKER: In regard to DOCTOR FROTHINGHAM's suggestion that counterirritation be employed, I would say that the objection to applying it over the mastoid is the possibility of confusion in deciding whether the appearance is due to mastoid involvement or to artificially produced irritation.

DOCTOR EMIL AMBERG: Concerning nitrate of silver, I said that it "may" lead to facial paralysis; there might sometimes be dehiscence and a perineuritis might be established. Concerning the anesthetizing of the drum membrane, it lately has been reported that anilin oil in a certain percentage added to the other remedies may really cause anesthesia of the drum membrane. I have not yet tried it. Concerning the inflation of the ear, I would not dare to inflate an ear having an acute disease, and in a chronic ear-disease I would be careful. Concerning massage, there are usually some mistakes made. We can easily see, should the drum membrane be atropic or should there be a scar, that if we compress the air and rarify it the drum membrane gives way very easily without allowing an effect on the ossicles and instead of doing good we do harm by adding to the atrophy of the drum membrane. This condition can be established by the use of the Siegle speculum which instrument is of exceeding value in the science of otology. Here Lucae's instrument comes into consideration. The kind of massage which has been mentioned tonight is, in my mind, not new. DOCTOR WILSON is no doubt the originator of his instrument. The idea, however, has also been followed out, if I remember correctly, by another doctor who published his experiments in the *Journal of the American Medical Association* sometime ago. **Doctor Wilson** takes into consideration the elasticity of the drum membrane. He compresses and rarifies the air and then uses massage. The question of massage is very much agitated at present, but has not been entirely settled. I may mention that double massage has also been recommended. Concerning the bougie and its uses in strictures of the Eustachian tube, I only add that this treatment sometimes, as has been recommended, may be supplemented by the aid of electrolysis. **Panse** recommends operation for rigidity in the region of the oval window. **Politzer** thinks that ossification might take place after the operation, but **Panse** says it takes so long to close the window that the patient enjoys the benefit of the operation throughout life. Lately **Liebermann**, by sections of the ear, found out that sometimes the bony substance around the labyrinth is changed in some form or another, in a way which he thinks can, perhaps, be influenced by giving phosphorous. It is supposed to be a spongiose formation.

STATED MEETING, FEBRUARY 20, 1901.

The President, CHARLES T. McCLINTOCK, M. D., in the Chair.

Reported by LOUIS J. GOUX, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor William F. Breakey, of Ann Arbor, read a paper on "The Elimination and Curability of Syphilis." (See page 145).

Doctor Biddle: The innocent chancre is apt to be followed by severe symptoms. The chancre of the innocent usually means a severe syphilis. As regards the curability of the disease, we should all agree that those patients who are under our care from first to last, those upon whom we have influence and whose lives we can regulate can practically be cured. It is only those who lose faith in us and go from one doctor to another that have difficulty in being cured. There is nothing in the course of syphilis that is more detrimental to its curability than addiction to alcohol. As regards excision, I think it is agreed now that the chancre already indicates constitutional infection, and that there is no question about the inadvisability of aborting such a disease by excision. The time of exposure is the only possible time when there could be a local disease. I do not exactly understand whether by cauterization **Doctor Breakey** means active cauterization by nitric acids; if, however, he means minor cauterization, I think all cases of hard chancre that present the ulcerated stage must be cured more or less by local treatment. The whole thing depends, for the present at least, upon the advisability of an early administration of mercury. I want to emphasize, as well as I can, why I believe that this should be commenced as soon as the sore is recognized; I do not mean well-developed cases, but those that are practically positive as far as we know. If we cannot heal the primary lesion the patient loses confidence in us and goes to some one else who can heal it. We should cure the primary lesion and show our ability to the patient. If the administration of mercury has an influence on the sore I can see no possible reason why we should not use it. If we ever allow a patient to reach a stage wherein sores break out all over his body he will go to some one else. The absence of secondary eruption simply means that the disease is more or less repressed. It is hard to control a patient who has had any secondary lesion. Let me present a man who last June had connection. He went to the hospital and remained there a month. He says in the meantime he had no connection whatever. After he had been there a month the sore broke out. He had no treatment except, as he says, cauterization. He had no eruption. This, as far as I can see, is a result of nonspecific treatment. I cannot understand how cauterization of a sore can possibly produce a condition like that. I fully believe that the sooner we get rid of a sore, and the more we can impress upon the patient our ability to cure, the better it is.

Doctor Matthews: The main topic seems to be the initital sore which by some is cauterized, by others excised. With this done I believe it is quite necessary to watch the glands in the region for enlargement and I never, as a rule, in my short experience, have begun the mercurial treatment until I noticed enlargement of the glands. I have never excised the sore. I let it take its course and make a typical application of sublimate of bismuth and antiseptic remedies, because I feel that cauterization or excision will not prevent constitutional infection. The glands begin to enlarge very early, and then I begin treatment by mercury. There seems to be a difference in people as to the toleration of mercury. Sometimes the protoiodid is given indiscriminately and produces a distressing condition of the mouth and gums. It is a difficult matter to treat such patients unless we have them under our constant care. Generally we treat them a short time and then they seek another physician. A certain authority regards the weight an important factor. If the weight remains stationary or increases it shows a healthful tendency; if it decreases it shows that there is not sufficient absorption.

Doctor Robbins: The position that the essayist has taken in regard to the early treatment of syphilis I think will probably agree with the views of most of us here tonight. There is a difference between treating a case of syphilis after waiting for a few days or weeks to see how the chancre develops, and waiting several weeks or months before inaugurating antisyphilitic treatment. It seems to me that he has not the experience of most of us, who says that chancres heal so slowly that our patients lose confidence in us on that account. The physician who examines not only the chancre but the lymphatic glands as well, noticing their shape when they are large; who studies the condition of the mouth, dryness and brittleness of the hair, et cetera, is in no danger of losing the confidence of his patient because he does not find secondary eruption or the glands. The other secondary symptoms, it seems to me, are so pronounced that no one would wait sufficiently long before inaugurating antisyphilitic treatment to in any way jeopardize the future condition of the patient. Sometimes the secondary skin eruptions are entirely absent, but the other conditions are so pronounced that we discover them early, and the delay is short. It is a matter of discussion whether giving antisyphilitics will interfere with the proper elimination of the skin. We do not know much about that. We know that we usually can distinguish a chancre from a chancroid, but the best of us sometimes cannot. That is not any great argument, but the facts are that, notwithstanding the patients and the many things said by those who believe in immediately beginning antisyphilitic treatment, when we wait for two or three weeks we often cannot see that our patients suffer from the delay.

Doctor Carrier: We commence the treatment of syphllis as soon as we have made a diagnosis. There are many secondary symptoms. Oftentimes cases are found that have the appearance of general malaise. I doubt if we ever see a case of syphilis in which we can begin with the primary lesion wherein yellowness, et cetera, of the skin are not noticed, and certain neuralgic pains complained of. The difficulty, of course, lies in making the diagnosis. As an illustration, three men have been under my care during the last three months with exactly similar sores, just behind the glans, varying in size from a bead to a bean. There was enlargement of the glans and a certain amount of induration of the sores which were somewhat ulcerated, and red at the bases. Two of the men are married and were very anxious. I think that when a man comes to us with a suspicious sore the first desideratum is to gain his confidence. If we can impress him with the fact that we know what we are doing and what is best for him, we can treat him successfully. One of these men was in a great furore. He was, practically, insane. It took me some time to gain his confidence. I told him, "I cannot tell and will defy any man ro tell whether you have syphilis or not. No harm will come to you if I watch this for ten days or two weeks; just as soon as I find that you have syphilis, will I begin energetic treatment." Two of the men did not have syphilis; the other one did. Just as soon as I am sure that a man has a chancre I commence treatment, but I want to be positive that he has syphilis. There are a great many things that are exactly like exanthema. How do we know that this primary lesion is at the point at which the virus enters into the system? There have been experiments made in removing chancre — a series of ten or twelve — in which five showed no symptoms of syphilis afterward. Of course there is much in Doctor Breakey's paper regarding the treatment, but I want to say just a word regarding the evidence that we are giving sufficient mercury. Never trust to colicky sensations of the bowels. They are not worth noting. The only evidence that a man could place any reliance upon is that condition approaching salivation. That the effluence is an eliminating process is a question. We regard the primary symptoms as a deposit of new and syphilitic material in those sites. It is reabsorbed and breaks down and the ulceration follows.

Doctor Newman: I do not believe in beginning treatment of a case until the approach of the secondary symptoms. It is impossible to be absolutely certain of the diagnosis until some of the secondary symptoms appear, and if we do begin treatment before that we simply obscure the symptoms and prevent a further treatment of the cases on definite principles.

Doctor Parker: The question of making a diagnosis before beginning the treatment is an important one. In regard to the tolerance of the individual to mercury, I have a working rule. I begin with a quarter of a grain of protoiodid of mercury twice a day for a few days; then three times a day; then after three or four days, I add a quarter of a grain more, making a full grain in a day; after three or four days more, I add to the original dose, watching the teeth in the meantime for blue lines. As soon as salivation begins I discontinue dosage a few days.

Doctor Breakey: The point referred to by Doctor Carrier as to the resemblance to exanthema I endeavord to make clear, and also that it was formulating an argument of inference and analogy as to any even remote resemblance between the exanthematous condition and the pure exanthema. I have a few photographs illustrating tertiary syphilis in a patient whose initial lesion was cauterized. The sores were healed; and the patient was said to be cured. Many years ago I treated syphilis in much the same way that Doctor Biddle advises. I felt it my duty to begin treatment at once. I have gradually gotten over that idea. One must not necessarily be too active and officious in order to do good. No prominent author in this country recommends such a course of treatment. Taylor, Fox, Duhring, Eliot, Hyde, Culver, Keyes, Van Buren, and many others all endorse the treatment that I have outlined, and some wait until the eruption is well pronounced. As to Doctor Biddle's patients, the older one I did not see until he came before you. I should class them as cases of tertiary rather than secondary syphilis. As to the colored man I wish to state that while the eruption is symmetrically and generally not inconsistent with the syphilitic eruption, it also has the remarkable feature of itching which with the acne character of the lesions tends to bring it under the head of complications of some subacute condition. I still contend that cauterization or premature mercurial medication might delay an eruption a long time. Whether for a year I am not prepared to say. As to the question of cauterization, I would not consider the application of some of the things mentioned cauterization. If there is a condition present that leads to phagadena, that condition requires cauterization. I understand by cauterization a destruction of the tissue I endeavored to speak of typical cases. I think Doctor Biddle will find that even in those particular cases which he is anxious to have improve promptly it is a question whether they get better as quickly or stay better by that mode of treatment. Nitrate of silver is not a good cautery. It is liable to aggravate the condition. How will the curing of the sore hasten the recovery of the patient? If we keep the sore clean and dry it tends to heal spontaneously as long as it is typical. If the infection is chancroidal it should be treated as any other ulcer of an actively infectious character. I do not want the society to infer that the speculative part of my paper can be maintained except by analogy. It is not strange that we cannot demonstrate our theories; because we do not know how syphilis is caused or eliminated. We cannot demonstrate on the lower animals. If I had a patient on whom I would dare to experiment I should like to try infecting by scales of skin in the secondary stage. I did not go into details about this in the paper. It seems to me that Doctor Biddle has a wrong conception of the disease if he supposes that the constitutional infection will be materially influenced by local treatment, whether it be cauterization, excision, or medication. I think in my paper I did advise waiting for the secondary eruption. At the same time I should probably do, in exceptional cases with phagadenic or other complications, somewhat as Doctor Biddle says. I still contend that as a rule nothing is lost by waiting until some secondary lesions of the skin appear. They do not always appear, but my experience is that if the case is not interfered with enough appear to make diagnosis positive. Patients have often gone through the state of secondary eruption and never known it. As to waiting, we do not wait inactively or indifferently. Before pronouncing sentence upon a patient to undergo a course of treatment for two or three years, we shouid wait and be sure. I have little difficulty in holding patients because of the local sore. I try to teach them that the lesion is not the disease and that constitutional infection already exists, that an eruption is to be expected and is favorable. I have many cases in which the lesions had been cauterized and otherwise treated specifically on first appearance, and pronounced cured or not to have been syphilis. However, after a latent period constitutional effects develop in unexpected and unusual ways—as gumma, ulceration, or paralysis.

Doctor Robbins: What has been your experience in finding a small sore followed after the proper length of time by a mild efflorescence which seemed a positive symptom but disappeared after six or seven days? Do red eruptions ever follow?

Doctor Breakey: I have known of several such cases. Many, no doubt, get well — extra strong, vigorous fellows who will live through almost anything, and sometimes even recover from syphilitic infection without any treatment.

Doctor Robbins: A young, vigorous man showed a small indurated sore on the foreskin, one-third of an inch back of the narrowing. The glans was larger on the crown than I believe it should have been. I told him to come back in a week. On his second visit I found the crown somewhat larger than when I saw him the week before, but the body was covered with a beautiful efflorescence. I pronounced the affection syphilis. He recovered and has been perfectly well since.

EDITORIAL ARTICLES.

THE USE OF MERCURY AND THE EFFLORESCENCE OF SYPHILIS.

Elsewhere in this number will be found an excellent and very readable essay on "The Elimination and Curability of Syphilis." The writer has not only summed up the results of a lifetime of observations but also gauged pretty accurately the authoritative opinions of syphilographers generally. The views expressed cannot be disdainfully rejected, no matter how strongly one may oppose to them their own judgment and experience. However, until the subject is cleared up at every point there is room for honest contraopinions.

It is a common view, in which the writer of the essay referred to shares, that the typical efflorescence of syphilis not only aids materially in the diagnosis of the disease but also constitutes an important and even desirable link or stage in its course; that the exhibition of mercury previous to the appearance of this eruption at least modifies if it does not interrupt it; and that therefore mercury should not be used until the full bloom has appeared.

It may be that any difference of opinion that may exist will depend solely upon what is to determine a sure diagnosis. In this respect, however, practice is certain to vary, for one may see sufficient evidence in a case to assert a diagnosis while another will postpone his decision until the efflorescence is seen. The former see only folly in waiting, since in many cases the typical eruption does not appear, and the latter is fully satisfied, providing he is not the patient.

No one will assume syphilis to be a desirable affliction. It is a good thing to be cocksure of the diagnosis. But once sure of it what is to be done? Shall we wait for the disease to *evolve*? for the body to become saturated with the loathsome poison before taking active steps to rid our patient of it? Do we withhold quinin in the presence of malaria? Do we allow diphtheria to *evolve* a membrane within the larynx before administering antitoxin? Why do we vaccinate before the smallpox has broken out? Such questions are significant in this connection and much fuller of meaning than the superstitious analogy, between syphilis and scarlet fever or measles. For neither measles nor scarlet fever have we a specific remedy. Both are treated symptomatically, empirically. It is true we do not know what mercury does with the poison of syphilis. It forms albuminates in the body and most always acts magically in curing the patient. It is positive and specific. Why then not have recourse to it at once? The question is a fair one to ask, is there not too much sentimentality about the mere fact of having or not having syphilis? If syphilis is to be successfully treated must it not be attacked as soon as the system is invaded? With reference to the insufficiency of mercury in preventing recurring symptoms cases are cited in which tertiary symptoms have appeared even after a course of mercurial treatment. Such criticisms are worthless since it may be insisted with as firm tenacity that those symptoms might have been ten fold more severe had not the treatment been given, and no one could gainsay it. In surgery we have fortunately gotten away from the theory of laudable pus and we evacuate or remove the abscess before metastasis has taken place, but in syphilitic practice we seem still to cling to the dark ages of treatment. Syphilis strikes a mortal blow; its effect is slow and yet it begins at once its deadly work. In mercury we have a weapon of great power, but we generally refuse even its defensive aid at the time when, according to analogy, it should prove most effective.

ANNOTATIONS.

THE BATTLE CREEK MEETING.

Time has gone on apace and the date for the next meeting of the State society is near at hand. President Patterson, of Charlotte, will rap the meeting to order at Battle Creek on May 15th. The General Secretary and the officers of the sections have industriously prepared an attractive program. As the place of meeting is centrally located and the time convenient there should be an unusually large attendance. This is a year when the so-called country doctors should be largely in the majority. Lay your plans now to be away from home and business for two days.

THE PANAMERICAN EMERGENCY HOSPITAL.

When it is noted that about three thousand cases were treated at the Omaha Exposition, and that at the World's Fair at Chicago nearly twelve thousand were cared for, and that there were sixty-nine deaths, the necessity of ample arrangements on all such occasions becomes apparent. Information has been publicly given out relative to the Emergency Hospital at the Buffalo Exposition. An artistic and convenient structure has been put up and equipped with the requisite number of cots, baths, medical and surgical appliances, litters and ambulances, and a staff appointed, of which Doctor Roswell Park has been announced as director. The management assures us that it is hoped there will be little need for this department, but there is no doubt that many will have just cause for appreciating the wise provision.

THE HOSPITALS OF JAPAN.

According to Doctor E. C. Register, who recently made a tour through Japan, and contributed to the *Charlotte Medical Journal* an interesting description of her hospitals, that country of forty-five million people has only ten hospitals worthy of the name. Two of these are located at Tokyo, the capital, two at Kioto, the old capital, two at Kobe, and one at each of the following cities: Yokohoma, Nagoya, Osaka, and Nagasaki. The Imperial University Hospital at Tokyo is as large as all the others combined. It has eighty resident physicians and six hundred trained nurses. The average number of patients treated there is twenty-two hundred, and in the various outdoor departments many thousand sick people are treated annually. It is well equipped and up-to-date, as are also the General Hospital at Tokyo, the Kioto Hospital Medical School, and the Kobe Hospital. Tubercular patients constitute from thirty-five to forty per cent. of the inmates, due undoubtedly to modes of living. Rheumatism was observed to be the next most prevalent disease while skin diseases are very rare. Surgical practice is limited, owing to long established prejudice, but the most modern methods and appliances were seen to be skillfully used. Apparently no regard was paid to sex either in wards or operating rooms. Both sexes were often in the same ward, being bathed and dressed at the same time, without any embarrassment to any one, In the Kobe Hospital seven operations were observed in the same room at one time. It had no preparatory anteroom for undressing and dressing. Female as well as male patients were admitted and treated or operated upon as their time came. One surgeon was operating for urethral stricture in the male, another setting a broken arm for a little boy, while another was doing gynecologic work. Nudity is everywhere but is never looked at.

MEDICAL NEWS.

PROGRAM OF THE THIRTY-SIXTH ANNUAL MEETING OF THE MICHIGAN STATE MEDICAL SOCIETY AT BATTLE CREEK, MAY 15-16, 1901.

GENERAL SESSION.

First Day—Wednesday, May 15, 8:30 a. m.

CONGREGATIONAL CHURCH.

1. Called to order by the President, P. D. Patterson.
2. Opening prayer by Reverend Wm. S. Potter, Battle Creek.
3. Address of welcome by the Mayor, Doctor L. M. Gillette.
4. Report of Executive Committee, W. H. Haughey, Battle Creek, Chairman.
5. Annual Reports of Secretary, Treasurer and Chairman of Publication Committee.
6. First Report of Committee on Admission, J. B. Griswold, Grand Rapids, Chairman.
7. Annual Report of Committee on Necrology, Hugh McColl, Lapeer, Chairman.
8. Report of Special Committees.
9. Miscellaneous business, including nominations for President and Secretary.
10. Annual Address on Obstetrics and Gynecology: "Nature in Obstetrics and Gynecologic Practice," B. D. Harison, Sault Ste. Marie.

Adjournment.

First Day—Wednesday, May 15, 7:30 p. m.

CONGREGATIONAL CHURCH.

1. President's Annual Address: "Psycho-Therapeutics," P. D. Patterson, Charlotte.

2. Annual Address on General Medicine: "Recent Epoch-Making in Medicine," Samuel Bell, Detroit.

3. Annual Address on Surgery: "The Requirements of Modern Surgery," J. H. Carstens, Detroit.

Adjournment to Banquet at the Phelps Sanatorium.

Second Day—Thursday, May 16, 11:00 a.m.

CONGREGATIONAL CHURCH.

1. Final Report of Executive Committee, W. H. Haughey, Chairman.

2. Further Report of Committee on Admissions, J. B. Griswold, Chairman.

3. Report of Committee on Finance, J. C. Black, Milford, Chairman.

4. Report of Committee on Nominations, Angus McLean, Detroit, Chairman.

At 12 o'clock the result of the ballot for President, first Vicepresident and Secretary will be announced.

5. Miscellaneous and unfinished business.

Adjournment.

SECTION ON GENERAL MEDICINE.

First Day—Wednesday, May 15, 2:00 p. m.

CONGREGATIONAL CHURCH. 1ST FLOOR.

1. Articular Rheumatism.
   (*a*) Etiology of Acute, F. W. Mann, Detroit.
   (*b*) Symptoms and Complications of Acute, C. H. Johnston, Grand Rapids.
   (*c*) Treatment of Acute, Geo. Dock, Ann Arbor.
   (*d*) Etiology and Treatment of Chronic, J. H. Kellogg, Battle Creek.

2. Rheumatism in Infancy and Childhood, C. G. Jennings, Detroit.

3. The Care of the Acutely Insane, Arthur McGugan, Kalamazoo.

Second Day—Thursday, May 16, 8:30 a.m.

CONGREGATIONAL CHURCH. 1ST FLOOR.

1. The Foundation of Faith in Medicine, A. W. Crane, Kalamazoo.

2. Disappearing Tumors, A. S. Warthin, Ann Arbor, and W. A. Spitzley, Ann Arbor.

3. Intratracheal Injections in Bronchial and Pulmonary Affections, Willis S. Anderson, Detroit.

4. Some Clinical Problems in Tuberculosis, H. M. King, Grand Rapids.

Second Day—Thursday, May 16, 2:00 p.m.

CONGREGATIONAL CHURCH. 1st FLOOR.

Election of Officers of Section—Chairman. Orator. Secretary for two years.

1. The Modern Management of Diphtheria, A. M. Campbell, Grand Rapids.

2. Antitoxin and Intubation in the Treatment of Laryngeal Diphtheria, with a Summary of 230 Operations, B. R. Shurly, Detroit.

3. The Close Relationship Existing between Epilepsy and Dyspepsia, C. D. Aaron, Detroit.

4. The Importance of Making a Thorough Examination of the Thorax in all Supposed Stomach Diseases, H. B. Garner, Traverse City.

5. My Experience with the Woodbridge Treatment of Typhoid Fever, I. N. Brainard, Alma.

6. Modern Methods in Country Practice, E. W. Tonkin, Edwardsburg.

SECTION ON SURGERY AND OPHTHALMOLOGY.

First Day—Wednesday, May 15, 2:00 p. m.

CONGREGATIONAL CHURCH.

1. Spinal Anesthesia—Its Method of Application and Demonstration upon a Patient, Angus McLean, Detroit.

2. Gastro-Enterostomy—Its Indications, Methods of Performance, and Results, T. A. McGraw, Detroit.

3. Gastro-Enterostomy and Intestinal Resection, Wm. Fuller, Grand Rapids.

4. Symposium on Genito-Urinary Surgery, by Ann Arbor members.
   (*a*) The Sterilization of Catheters, C. B. Nancrede.
   (*b*) Etiologic Factors in Gonorrhea, T. S. Burr.
   (*c*) Sequelæ of Gonorrhea, C. G. Darling.
   (*d*) Bacteriologic Findings in Cystitis' C. George, Jr.

5. Treatment of Acute Specific Urethritis, R. H. Spencer, Grand Rapids.

Second Day—Thursday, May 16, 8:30 a.m.

CONGREGATIONAL CHURCH.

1. Gall-Stones.
   (*a*) Etiology, V. C. Vaughan, Ann Arbor.
   (*b*) Clinical History and Diagnosis, Wm. F. Metcalf, Detroit.
   (*c*) Medical Treatment, Hugh McColl, Lapeer.
   (*d*) Surgical Treatment, H. O. Walker, Detroit.

2. Surgical Treatment of Hepatic Cirrhosis, Hal C. Wyman, Detroit.

Second Day—Thursday, May 16, 2:00 p.m.

CONGREGATIONAL CHURCH.

Election of Officers of Section—Chairman. Orator. Secretary for two years.

1. Treatment of Nevus, A. N. Collins, Detroit.
2. Inspection of the Rectum by Mechanical Means, Wm. L. Dickinson, Saginaw.
3. Obstruction of the Rectum, J. A. MacMillan, Detroit.
4. Mastoid Abscess—Disaster from Waiting for Group Symptoms, C. B. Stockwell, Port Huron.
5. Bloodless Operations in Rhinology, A. S. Rogers, Saginaw.
6. Exophoria, Walter R. Parker, Detroit.
7. The Middle Turbinate in Its Relation to Disease of Adjacent Tissues, Chas. H. Baker, Bay City.
8. A Special Feature in the Treatment of Trachoma, W. F. Strangways, Flint.

SECTION ON OBSTETRICS AND GYNECOLOGY.

First Day—Wednesday, May 15, 2:00 p. m.

PRESBYTERIAN CHURCH.

1. Abnormal Gestation and Labor. Due to—
   - (*a*) Malposition, A. W. Alvord, Battle Creek.
   - (*b*) Renal Insufficiency, Rush McNair, Kalamazoo.
   - (*c*) Deformed Pelves, Daniel LaFerte, Detroit.
   - (*d*) Ectopia, H. W. Longyear, Detroit.
   - (*e*) Neoplasms, J. G. Lynds, Ann Arbor.

At five o'clock J. H. Kellogg will demonstrate his Method of Shortening the Round Ligaments at the Battle Creek Sanitarium Hospital. (Spinal Anesthesia).

Following Doctor Kellogg's demonstration, W. H. Haughey will demonstrate his Method of Closing the Abdominal Incision with his "Ideal Suture."

Second Day Thursday, May 16, 8:30 a. m.

The Section on Obstetrics and Gynecology will attend the Symposium on Gall-Stones in the Section on Surgery and Ophthalmology in the Congregational Church.

Second Day—Thursday, May 16, 2:00 p.m.

PRESBYTERIAN CHURCH.

Election of Officers of Section—Chairman. Orator. Secretary for two years.

1. Gynecology—Medical and Surgical, O. S. Phelps, Battle Creek.
2. Soap, C. Henri Leonard, Detroit.
3. Pelvic Lesions an Important Factor in Delaying and Preventing the Normal Menopause, T. E. Sands, Battle Creek.
4. Repair of the Vaginal Outlet at the Time of Labor, Richard R. Smith, Grand Rapids.
5. The Practical Application of Hydrotherapy in Gynecology, J. H. Kellogg, Battle Creek.

RECENT PUBLICATIONS.

REVIEWS.

FEEDING AND NURSING THE BABY.*

THIS is the third book of this character that has come before us recently. Like the others it begins with pregnancy and gives here and there much useful information bearing upon the whole period of childhood. Unlike them it is less a comprehensive essay and more a cyclopedia of knowledge relating to the rearing of healthy children. It is popularly written, the matter is conveniently grouped and indexed, and the author's style is admirably suited to the work. Not least in importance are the epigrammatic utterances emphasized at the top of nearly every page. There is slight and perhaps unavoidable repetition and the volume is rather large. It is intensely practical and cannot fail in being very useful to mothers and nurses for whom it was written.

*By Charles Douglas, M. D., Professor of Children's Diseases and Clinical Medicine in the Detroit College of Medicine; Member of the American Medical Association, et cetera. Well illustrated. Baby Book Company, Publishers, Detroit, Michigan, 1901

LEARTUS CONNOR, A. M., M. D.

THIRTY-SIXTH PRESIDENT OF THE MICHIGAN STATE MEDICAL SOCIETY.

See page 233.

The Physician and Surgeon

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

THE DOCTOR IN PUBLIC LIFE.*

By ALBERT E. CARRIER, Detroit, Michigan.
PROFESSOR OF DERMATOLOGY AND CLINICAL MEDICINE IN THE DETROIT COLLEGE OF MEDICINE.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

It may be that some of the views expressed in this paper will be considered too radical, but if so they are open for discussion, and I am willing to be convinced of error. The physician holds a place in the community that is unique and wholly unlike that of the merchant, the mechanic, the laboring class so-called, or the members of other professions. His occupation, or his business, is caring for the sick and preventing the spread of disease; keeping the members of the community in which he is located in a condition of well-being that enables them to pursue their various vocations. Looking at the business side of our profession, it is the only calling followed for a livelihood in which the pursuers endeavor by every means in their power to prevent increase of business.

Preventive medicine occupies a large proportion of the physician's time. The business of doctoring is a continuous service of three hundred and sixty-five days in the year, of twenty-four hours each, and remuneration is the doctor's only when working. Absence from business for recreation or other causes is attended by cessation of income, as it is impossible to delegate his work to others—valid reasons for not accepting public positions in which the salary bears no proportion to the value of the medical men filling these positions. The doctor visits the homes of all classes—the millionaire and the pauper, the educated and the ignorant, the citizen and the foreigner, the black and the white, and the criminal as well. There is no other calling or occupation that brings its followers into such intimate relation with its patrons, as does the profession of medicine. The doctor enters into the lives of the people, knows more of their trials, their struggles, of their heartaches, of the class feeling, et cetera, than does even the clergyman. This intimate knowledge of his patrons eminently qualifies him for a man of affairs, or a public officer. Now with these qualifications, along what lines should the doctor exert his influence in public affairs ?

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*Read before the Detroit Medical Society.

It is his province to educate the members of the community in which he lives to an enlightened sentiment regarding matters of public health. Let us take as an illustration the matter of vaccination. It seems absurd that in our time any objection should exist regarding this means of protection against variola. The public needs the facts, which can be given, that will show beyond all contradiction that smallpox is the one disease that we have the means of stamping out entirely. The doctor should use voice and pen to combat the absurd arguments of the opponents of vaccination. The public press offers a means open to us for the dissemination of knowledge that will reach the people, and create a sentiment endorsing the profession's efforts to secure better and more effective laws relating to the public health. The idea prevails among the laity, that the doctor, because of the exacting duties of his business, is unfitted for any other work or calling than the attendance upon the individual sick, and in the main this is true, but each particular member of a community, whether cooper, lawyer, farmer or doctor, is in duty bound to have a voice in the welfare of the entire community. Physicians are public officers even without election or appointment. Although when attending contagious diseases they are acting as doctors simply, they are officiating in a public capacity when they enforce measures for preventing the spread of these diseases.

There are a great many public offices through which more would be accomplished if they were filled by men educated in medical matters. Naturally enough those of a purely medical character should be filled by physicians, but those of a semimedical character and many of those that are nonmedical would better accomplish their objects if filled by educated doctors. My plea is for medical men to enter the political arena; first, in order that we may secure proper legislation in medical matters, and second, to demonstrate that we are a power in the community (a fact at the present time not recognized) and demand recognition. Men seek, and are elected or appointed to, political offices, and during their incumbency retain the respect and confidence of their fellow citizens. All professions and occupations have furnished these candidates. The proportion from the ranks of medicine has been very small in offices that are not of a medical character. There is no reason why the physician should not fill nonmedical offices acceptably for he has all the qualifications for making a good public officer. He is usually a property owner, a man of sober habits, a thinker; and again, as I have already stated, his work has brought him into the closest relations with the people of the community in which he lives, thus enabling him to know their needs and wants better than any other resident of that locality. These are all elements that would tend to make the doctor a well-equipped incumbent for any office in the gift of the people. The methods pursued in politics at the present time I know are not very attractive to honorable men, but these methods exist and if doctors stay out of the political arena until they are effaced, I am afraid that not many within reach of my voice will live to see physicians elected congressmen and senators, or filling cabinet positions. A kind of sanctity has been thrown around our profession which has resulted in a feeling that it is beneath the dignity of a physician to enter the lists for political preferment. Far be it from me to attempt to overcome this feeling by the suggestion of doing anything that would disparage in the slightest degree our calling, but I think that we are not doing our whole duty if we do not attempt to right wrongs that we know exist, simply because the method of accomplishment may seem a little *infra dignitatem*. It is believed, in a measure at least, by the laity that a physician is unfit and incompetent to pursue any other calling than that of caring for the sick. The same would apply in all other professions or occupations that furnish the officeholder. A more valid objection to the doctor holding office is the loss of income, which at once ceases completely when he leaves the field of his professional activity; and it is only the major offices that yield a revenue at all commensurate with the physician's ability.

We are suffering today from poor laws, and from poorer execution of these laws, simply because we have allowed others to do the lawmaking. In many states the laws regarding the regulation of the practice of medicine are so lax that it is no difficult procedure for any one to become a doctor, but when I refer to medical men in this paper I wish to be understood as having in mind only the educated and competent physician, and not the lax-law doctor. Many of these latter, owing to political methods, are today filling offices of trust that have to do with matters of gravest import in questions of health. There are a great many ulcers, excresences, and malignant growths upon the various political parties of our day that need to be removed, and who is so well qualified for the operation as the doctor, the man who is familiar with all that pertains to asepsis, and who would remove these conditions with the least possible injury to the body politic ? A medical education, instead of debarring, qualifies a candidate for the office of mayor, alderman, governor, congressman, senator or president, the reason being that the health of the people occupies a prominent place in the legislation of all nations. Health officers and health boards are merely the agents for executing laws enacted by township, city, state, or national legislation, and the legislators, or lawmakers are drawn from all walks of life excepting that of the medical profession. Is it any wonder that the laws fail to accomplish the purpose of their enactment? The influence that one member of a legislative body can exert over another is many fold greater than that exerted by the private citizen upon a legislator. What do you think would have been accomplished in our last legislature in the way of enacting a bill regulating the practice of medicine had we had as members of that body a fair proportion of medical men ? If fitness were the necessary qualification to secure political offices, the doctor would have a cinch. Laws for the guidance of health boards are now made by men unfamiliar with matters of health, and a cumbersome machine that affords an opportunity for rewarding some political hack is the result. Positions are created to reward politicians rather than to make effective the laws.

Let me call your attention to a few offices that should be filled by doctors, and also to some others that should be created to be filled by doctors. The coroner's office of today is an opprobrium. It is one of great importance, because its occupant has to determine the cause of death, and he should, therefore, be a well-educated physician. The office should not be elective, to be given to men whose only qualification is that they have a pull with the "byes," and the party needs the votes. Is it any wonder that "crowners quests" are at times ludicrous, and that the office is so often held up to ridicule ? The verdicts before such an incompetent, with a jury selected from men of the same standing, are often erroneous, fixing liabilities upon innocent persons, the rectifying of which requires months of time, and entails enormous expense. We should work to abolish the office as an elective one, and to make it appointive, doing away with the jury entirely and making the incumbent a physician.

That the majority of a health board should be medical men, and the health officer a doctor would seem but rational; but we find in many instances that health boards are so constituted that the doctors are in the minority, and the actions of the board are dictated by a lawyer or a shoemaker —an absurdity. The appointee by members of such a board with tenure of office dependent upon their whims is not the doctor that we want for health officer. The remedy for this state of affairs is in securing as members of our city councils, or legislatures, where these offices are created and laws for their guidance enacted, of a sufficient number of physicians whose influence would result in proper legislation when matters of health are the subject. Twenty doctors united in the legislature would do more than the entire profession acting from the outside. There are men in the profession who have acquired a competence, and can therefore afford the time to accept some of these minor offices, and it is a duty that they should recognize.

In our rural districts there is a large field of usefulness for the doctor as a public man. Here he is one of the few educated men, and the only one who is familiar with the sanitary problems of water supply, drainage, ventilation, et cetera. In these communities are erected buildings for public gatherings. There are schoolhouses where, for five days of the week, and five hours each day, are gathered the children of the town or village. In the construction of these buildings is the doctor's knowledge called for? The questions considered are: How much lumber will be required, how many doors, how many windows, and how large a stove for heating the building? The matter of how many cubic feet of air should pass through the lungs of a healthy child in a given time is never taken into account, nor the direction in which the light should fall upon the pupil's desk, nor the location of the blackboards. These are matters of minor importance. A hole in the ground furnishes the water supply, and another hole serves the purpose of a lavatory, which usually being at a higher elevation than the well, makes the drainage to the latter much easier. The water is cool and clear, positive evidence that it is pure. The results we all know. Here is another public position for the doctor—upon boards of village trustees, or boards of education, where his knowledge will enable him to dictate the construction of proper buildings for public gatherings.

There are, however, other abuses regarding the health of our school children, that for their rectification require the creation of another office which must be filled by a physician, and that is a medical inspector of all schools, both public and private. Health officers have limited functions to perform which relate to the prevention of contagious diseases, and in exercising this power in connection with the schools they would isolate those suffering from smallpox, diphtheria, et cetera, and prevent attendance at school of any exposed to these diseases. Further than this they could not go. The purpose of our public schools is, in part, at least, the better preparation of the pupils as wage earners, enabling them to get better remuneration for their services by the development of a mental superiority. In many instances it is evident that this is being secured at the expense of physical development and the result is an educated mind in a diseased body, ending finally in a diseased mind. The physical development of the pupil is wholly neglected by most of our boards of education. The best results will be obtained from our public schools when the curriculum requires the same attention given to the body that is given to the mind. The poorer classes in every community recognize the necessity of an education for their children, but the period of time that they are able to give for the acquirement of the same is of necessity limited, and they seek to acquire the utmost that can be attained in that time. Parents of these children are seldom capable of judging of the ability of the child, as far as health is concerned, to withstand the demands of modern school life, and at the earliest possible moment allowed by law, the child is placed in school. The puny and feeble are placed upon the same footing and under the same requirements as the hearty and robust. It is evident that much benefit would result if the sickly and feeble children could be isolated, and proper attention paid to their physical development and the securing of healthy bodies, while the school curriculum is so arranged as to comport with this object.

Medical inspection of schools has been in operation in some of our large cities for some time and the results have more than justified expectations in so far as the prevention of contagious diseases has been concerned, but I think this inspection would be far more valuable if it went a step farther, and paid special attention to the detection of the insidious beginnings of diseases not considered communicable, and which, if discovered early and placed under proper treatment might be thoroughly overcome, while if uncared for chronic invalidism inevitably results. An educated corpse is not of much value to a community. Medical inspection of schools would pay a better interest upon the investment than any class of securities upon the market, for the school is often the breeding place of preventable diseases, and with proper inspection this danger would be eliminated. As I have already stated the rural districts suffer more from this danger than the urban. The health officer in these outlying sections is often the village constable. A small village in an adjoining state had a system of drainage from one cellar to another. The drains after running through several cellars finally emptied into the river. In a house some distance from the river a case of diphtheria developed, and the half-dozen houses through which that drain flowed each developed cases of the disease. The drains were closed and sewers built, but in the village cemetery were numerous little white monuments to the ignorance of the village trustees. Township health officers should be doctors.

Another office that should be created is that of "coroner's physician"—a competent man to make autopsies. It requires knowledge and ability to make proper postmortems, and when the lives and liberties of individuals depend upon the result, it is a matter of the gravest import that these examinations be carefully and skillfully made. The office should have a salary attached that would command the services of a competent man. Another office that should be created to be filled by a physician is that of "medical expert," to sit with the judges in criminal, or insane, or malpractice cases. In our admiralty courts I understand that a captain sits with the judges. Now if it is necessary to have an expert in cases involving money only, it seems to me that it should be doubly so in cases involving the life or liberty of an individual. This office should be for life, the appointee to sit with the judges in the trials of the cases named, and his judgment should be final as is that of the judge in other cases. A physician holding this position for life, appointed for his fitness, and having the confidence of the profession and the community as well, would remove the opprobrium so often cast upon our profession by the sorry testimony given by the medical witness in the hands of astute lawyers.

The positions that I have alluded to so far are those that pertain to matters of health, and of course the incumbent should be a physician, but there are other offices that the doctor might fill with honor that are not of a medical character. Surely there are in our profession capable men for aldermen, congressmen, senators, governors, et cetera. Elected to these offices physicians would make their influence felt in city, state, or national politics, and would secure for our profession the recognition that it deserves. Today our views are not accorded the respect that they deserve in matters other than medical. I am asking that some of our best men in the profession, those who have acquired a competence, accept these positions even at a sacrifice of time and income. I am well aware that the emoluments of most offices are not an inducement to doctors, but our services are never given their proper value in dollars and cents. However, a public recognition of value would be followed by proper compensation. Would any other than a doctor have accomplished the good that LEONARD WOOD did in Cuba, and is he a whit less a major general for being a doctor? More major generals from the medical profession would result in a better-officered army. If the better medical men would take these offices they would be above the suspicion of seeking the position for the perquisites. It is said that every man has his price, but the price of doctors is so high as to bar any sale.

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THE RELATION OF FERMENTATION TO DISEASE.*

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THE topic of this paper may seem formidable indeed when we consider what a range of fact and theory looms up before us at the sound of the title. I do not, however, intend to weary you by an exhaustive survey, but simply to put forth a few thoughts for the purpose of eliciting discussion. It is, therefore, not necessary for this purpose to generalize or philosophize upon the laws of disease, many of which we unfortunately cannot recognize or formulate; so I will call your attention, as a starting point only, to two or three well-known platitudes.

When a part of the body has been injured mechanically, the process of repair always involves a certain definite amount of local chemotaxis or inflammation, the degree and activity of which varies according to the anatomic character of the part and the extent of the injury received. While the same may be said of a chemical injury if the offending agent be of inorganic character, it cannot be said of the agent, if it be *organic* in character, or biochemic.

Now discarding from our consideration the first two propositions alluded to, let us devote our attention to the last named method of disease, the biochemic, which, as is well known, is generally sooner or later a process connected with what is technically called *sepsis*. Among the interesting questions before the profession today, perhaps none is more important than the one connected with the origin of inflammation and sepsis. It has been almost if not quite denied by some observers that inflammation can arise either from an internal or external source without the agency of microorganisms. I think, however, that the point is conceded by a majority that it may so originate, and that we may judiciously modify the old definition of inflammation, namely, heat, redness, swelling and accelerated motion of the circulation, by the addition of a *sepsis.* The principal morbific agents are microorganisms, first, and toxins, resulting secondarily therefrom. If, then, we were allowed to hypothecate a substitute definition to please the large majority of the professional public, especially our pathologic and surgical brethren, it would be as follows: Inflammation is an abnormal chemotaxis or a catabolism as the result of the growth and action of some microorganism in the tissues. In other words, a foreign body from without which is a living organism and an entity is in general the cause of the process known as inflammation, and its attending sepsis. This you will observe is a radical statement, but I think it represents a belief which for a considerable time at least has been held by a large majority of the profession. In this connection, it is but just to say, however, that a great many observers, while not expressly stating it in their writings, have not ignored the operation of fermentation as a pathologic corollary, some at least considering toxins as enzymes, while a few have had the temerity of emphasizing or advancing to their proper place in the pathologic chain the strictly fermentative processes of nature. This leads us to another widely discussed conception, namely, can or do extrinsic living microorganisms live and grow at will, so to speak, in *healthy tissue?* This is a problem which is staggering the conclusions of many minds while endeavoring to interpret morbid phenomena, for if it be true that living microorganisms *cannot* of themselves produce a morbid state in healthy tissue, it becomes self-evident that whenever they are found in operation, some previous injury or disease must have preexisted. Now, if this be true, to what can we attribute the previous disease, or the so-called culture medium? Is it an unrecognized molecular death, or a catagenesis, or a fermentation from the presence of enzymes of an alkaloidal or colloidal nature, derived from material within the body and acting in this connection independently of microorganisms of any kind ?

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*Read before the JACKSON COUNTY MEDICAL SOCIETY, April 9, 1901.

This brings us to the consideration of the definition of fermentation. In short, we find that the process of fermentation consists of two classes. The one process is developed by purely chemical action, while the other involves a process of change or destruction depending upon the presence and growth of a living organism. Such, for instance, as the fermentation produced by the yeast plant. OPPENHEIM and other physiologic chemists give three classes of the purely proteolytic ferments, namely, pepsin, trypsin and papain, the two former being of animal origin and the latter of vegetable origin. These comprise other substances, such as pepsinogen, zymogen, et cetera, all of which act in the same way toward the disintegration of organized material and the production of other products generated by various forms of proteolysis. There are other questions offering problems of immense difficulty, as acknowledged by noted mycologists, one, of drawing the line of demarkation between the lowest form of animal and the lowest form of vegetable life, because of the similarity in proteid composition of these low, primitive forms of animal and vegetable existence; and another, the similarity of their metamorphosis both direct and stadial. This would seem an insignificant point to raise if it were not that so much of the theory relating to the origin of disease depends upon the question of making this distinction. For illustration: the seeds or spores of a plant are known to endure the severest vicissitudes, while the plant itself, if we may so speak of microorganisms, must either grow or die. Now if all microorganisms are of vegetable character, it is fair to presume that they must in general develop by spores in accordance with the universal law of the vegetable kingdom. In such an event it would be easy to explain why microbic disease can be latent, the spores remaining lodged somewhere in the tissues awaiting the proper contingency for development into activity; but if, on the other hand, they consist of animal protoplasm and multiply entirely by fission or budding without spores, it is difficult to see how such a specific or disease process can ever remain latent, for the microorganism in this case must either evolve into something else, or degenerate at once. It has therefore become necessary in order to explain properly the irregularity of the pathogenesis of specific diseases to assume that whatever latency may occur from the time of inoculation to the advent of clinical phenomena is due to the lodgment of the spores of microbes in the tissues. Again, as spores from the many bacteria cannot be discovered in the fluids of the body it is the toxins, in connection with bacteria, that have been credited with the active agency in the production of sepsis. For a long time it was believed that toxins were direct secretions of microorganisms and later that they were essentially the contents of the bacteria. DOCTOR VAUGHAN and others have recently made this latter statement and have described how the toxins consisting of the contents of bacteria, transude through the membranous envelope of the microorganism. This theory is certainly more tenable than others recently held, namely, that bacteria are capable of secreting a specific substance, a toxin or enzyme, instead of splitting up their media. We now come to consider the role probably played in morbid processes by chemical fermentation and by enzymes independently of microorganisms.

The various classes of proteids composing organized bodies, such as albumins, globulins, albuminates (or derived albumins), proteoses, peptones, coagulated proteids, et cetera, are manifestly subject to decomposition and metamorphosis represented by anabolism, metabolism and catabolism, through either normal or abnormal chemical action, and notably through fermentation which may be induced by heat, by reagents—inorganic or proteolytic, by electrolysis, by ferments, and by microorganisms. Of the three first mentioned classes of agents, it must be conceded that they may either originate within the body, or be introduced from without, while of the latter class, it is generally believed that they always enter the tissues from without in one way or another. If, however, any of the disease germs are found to belong to the animal instead of the vegetable kingdom, then without the aid of imagination, it is easy to understand how they might originate from the cellular elements of the body and even assume a specific character through the operation of catagenesis or biogenesis, under certain circumstances.

When we consider the immense diversity of reactions and results following the contact of the natural ferments of the body—such as pepsin and trypsin for instance—with the various inorganic and organic reagents as demonstrated by the physiologic chemist, and couple with this the intricate and diverse chemical operations of the animal body, it would seem easy to understand how readily slight deviations of metabolism may take place, and how easily such deviations may promptly generate cellular or other protoplasmic degeneracy and abnormal fermentation either with or without the cooperation of extrinsic microorganisms. For without some such assumption, how can we rationally account for a definite microorganism being converted from a saprophytic to a pathogenic microbe. If inexplicable upon some such basis as this, then surely the accepted morphology of the specific disease germs must be still incomplete.

In conclusion, allow me to state the belief that many of the clinical phenomena met with at the inception and probably during the course of the acute infectious diseases represent the effects of insidious fermentative processes, both degenerative and productive, which are going on in the body through a deranged or incoordinate chemistry or chemotaxis and in support of this theorem permit me to call your attention to the behavior of pepsin, of peptones and trypsins, the various so-called yeast ferments, and their products, the problems connected with the clinical history of such affections as diabetes mellitus, Addison's disease, myxedema, rheumatism, gout, cholelithiasis; and also to those acute infectious diseases believed to be caused by bacteria, such as diphtheria, glanders, anthrax, actinomycosis, influenza, pneumonia, tuberculosis and other such diseases. for in the class of diseases first named it is impossible to say that they are not purely zymotic diseases, and in the last named it is impossible to say that they are in the beginning wholly caused by the presence of a microorganism. On the contrary it is very probable that the initiatory stage is a degeneration of normal cellular or other protoplasmic elements, by abnormal chemotaxis, which secondarily invites the *decomposing*, destructive activities of microorganisms, some of which up to this stage may have existed in a saprophytic state.

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APPENDICITIS, WITH REPORT OF A CASE COMPLICATING OVARIAN DEGENERATION.*

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In a recent discussion of this threadbare subject one of our most competent and experienced fellow physicians, whose judgment and medical skill we all respect, questioned the wisdom of the growing tendency among surgeons to explore and operate early upon cases of appendicitis which by their apparent benign symptoms seem amenable to medical treatment. A recent instructive case bearing upon this interesting and important phase of an unsettled problem is my only excuse for again taking up this subject and soliciting a discussion.

A common remark by both the laity and the profession that the recognition of appendicitis is a modern discovery is not strictly true. While American surgeons may proudly claim much of the credit in placing appendicitis upon a true pathologic basis, like all other great advances in our work, this result is due to the combined acuteness and observation of many minds.

In 1859, Mestivers reported a case of perforated appendix. As early as 1812, in England, Parker showed that peritonitis might arise from such perforation. Albers, in Germany, recognized a distinction between perforation of the appendix and perforation of the cecum, in 1835, but

*Read before the Detroit Academy of of Medicine.

considered the appendicular perforation secondary and unimportant. BURNE, in 1837 and 1839, was the first to make a distinction between perforation of the appendix and of the cecum. He originated the term typhloenteritis. The most important knowledge gained in clearing this subject was made by BARDALABEN, who demonstrated by a dissection of over one hundred and fifty cadavers that the appendix and cecum were intraperitoneal organs. This demonstration, made in 1849, notwithstanding its importance, seems to have been lost sight of. In 1833, the great DUPUYTREN claimed that all perityphlitic abscesses were of cecal origin. From this GRISOLLE dissented and, in 1839, recognized the importance of the appendix and deserves the credit for advising that these abscesses be opened before fluctuation can be detected. In 1843, VOLTS contended that the appendix was largely the cause of these abscesses. In the same year ROKITANSKY clearly described catarrhal appendicitis but failed to rid himself of the importance of the cecum in causing the abscess. No improvement of note was made until WILLARD PARKER, of New York, in 1867, urged an early operation for these abscesses. To him is due the credit of first systematically treating these cases by an early operation—thus carrying out GRISOLLE's advice given thirty years before but unheeded until this time. So far as I am able to find, WITH, of Sweden, in 1880, was first to believe so strongly in the importance of the appendix that he emphatically denied the existence of such a disease as typhlitis. In 1881, KRAUSSOLD who seems to have been first in Germany to advocate early operation reinforced PARKER's teaching, but made no reference to PARKER in his paper. In 1882, NOYES reported one hundred cases treated by PARKER's method; ninety of these being in the United States. TREVES, in 1885, again demonstrated that the cecum is an intraperitoneal organ which practically settled that fact. In 1886, while an interne in Bellevue Hospital, I first heard of appendicitis through the teachings and paper of DOCTOR BULL, who advocated early aspiration in these cases to determine the presence of pus which he maintained did not always manifest itself by symptoms. He succeeded with his needle in advancing the time of operation from the seventh or the eighth day to the second or third in many cases and emphasized the fact that these abscesses almost invariably originate from the appendix, fixing for all time, apparently, the true pathology of this now common and dreaded disease. In 1886, HALL, WEIR, MCBURNEY and others and especially TREVES, in 1888, practically settled the question of early operation. Perhaps to no one are we more indebted than to MCBURNEY who, in 1889, recommended operation before rupture occurred, thereby affording opportunity for general peritonitis and death.

In following the history of development in knowledge of this disease and its management up to MCBURNEY's ideas, in 1889, we arrive at a rather definite conclusion—that early operation is the safest procedure. Since that time the question of early or late operation, or of operation at all, has been discussed pro and con until one unguided by a relatively long personal experience has unquestionably found it difficult to say what really is the concensus of opinion of those best able to judge. Many medical authorities contend for medical treatment alone while some surgeons have advised immediate operation as the only safe procedure. The fact, that many patients will apparently fully recover without surgical interference and that many others will die no matter what medical or surgical means are adopted owing to the great difference in the manifestations and pathologic conditions of this disease, has served to confuse and make difficult broad and sure methods of procedure whereby the cases amenable to our skill can be relieved and cured. To arrive at a conclusion whereby the largest percentage of these cases can be saved is about all we can hope to do at present at least.

We all recognize, I believe, a class of patients in whom rupture of the appendix and a fatal form of peritonitis are practically the first symptoms drawing our atttention to their condition. It is in these cases that operative measures usually fail. The few who recover are saved by surgically cleansing and irrigating the abdominal cavity. The earliest operation after diagnosis in these cases is usually too late. No matter whether surgical or medical treatment be adopted, most of these patients die. They, therefore, have little practical bearing upon the larger number of cases in which the pathologic processes are much slower. When the rupture of the appendix is followed by a local peritonitis and abscess there is usually ample time for surgical aid by draining the abscess before the inflammatory protecting wall is ruptured and a general peritonitis or a general sepsis takes place. In this class of cases—a very large class by the way—no one can deny that nature, assisted by wise medical treatment, is fully able to overcome many difficulties. The patients recover even after distinct tumor and fluctuation are demonstrable. Granting that many cases do recover, in view of the fact that many do not but go on to rupture of the abscess into the peritoneal cavity, general peritonitis, general sepsis with multiple abscesses and death, are we not justified in operating early because of the fact that no one yet has demonstrated ability to say which of the cases will recover or which will go on to a condition beyond relief? Do we decrease the patient's chances for recovery by an operation carefully performed? In my opinion we do not. When patients die it is from the severity of the pathologic condition. By removing the septic matter; by making rupture and general peritonitis impossible; by removing all chances of general sepsis; and by practically guaranteeing our patients against a recurrent attack; I cannot escape the conclusion that we do increase their chances for recovery when an operation is timely. By timely I mean not in the shock of onset of the disease but when we are warranted in assuming that the patient has a reasonably favorable chance for recovery. Such a time presents, in the vast majority of cases, within the first two or three days.

In that large class of cases of not very severe onset, in which symptoms are more benign—those which we have called catarrhal, obstructive, possibly due to arterial sclerosis, malposition, or imperfect drainage—causing fecal enteroliths and spasm, which all our medical friends would deem safe and treatable, I firmly believe surgery finds its golden opportunity. These are the recurring cases, that afford us opportunity to operate safely and close up the abdominal cavity, thus curing our patients, who consequently never realize what they have escaped. This is probably the initial stage of the condition that goes on to rupture, peritonitis and death. In view of the gravity of the condition to which this appendicular irritation often leads, can we seriously question the propriety and wisdom of doing so simple and safe an operation as the removal of an unruptured, uninfective appendix? Do we really jeopardize our patient by this operation or are his life and comfort in jeopardy without it? I will report a recent case in answer to these questions. This case also illustrates the difficulties of diagnosis when there are right ovarian complications.

A young lady, aged twenty-four years, giving a history of stenotic dysmenorrhea since her first menstruation, recently came under my care. Two years ago I dilated, curetted and drained the uterus which was enlarged with marked endometritis from imperfect drainage. Previous to this operation she had severe pains and a condition approaching hystero-epilepsy at each menstrual period. All these symptoms ceased after the before-mentioned treatment and menstruation was painless for about eighteen months. Then began ovarian pain, at each period increasing until the ovarian tenderness was constant. There seemed no doubt of ovarian irritation. Four weeks ago, at a menstrual period, the ovarian disturbance became more marked, and in addition pain and tenderness above and at McBurney's point with slight nausea developed. The temperature registered 100° Fahrenheit; the pulse was normal. The temperature soon became normal, but the paroxysmal pain, radiating upward into the hypochondrium with constant pain over McBurney's point on pressure or motion, remained. I saw the patient in consultation with her family physician who had made a diagnosis of appendicitis. From the nervous, hysteric state, pain down the leg, and double points of tenderness—one at the usual seat of pain in appendicular irritation, the other distinctly ovarian—with my previous knowledge of the case, I concluded we had added to the ovarian tenderness an irritable appendix, probably unruptured; and advised the removal of the appendix and exploration of the ovarian distress as no improvement had taken place during the past few days and the pain was greatly increased by sitting or standing.

An incision somewhat lower than usual for appendicitis was made. In the abdominal cavity no fluid was found until the ovary was explored when there was an escape of sanguineous peritoneal fluid from it. The ovary, nearly the whole of which formed a cyst that had ruptured on loosening, was firmly bound down and the ovarian tissue was practically destroyed. On bringing up the appendix no adhesions were found nor was it inflammed through to its peritoneal coat. It seemed to be choked at its proximal end while the distal end was distended and bulbous so that its contents could be palpated like a cyst. It was amputated and when opened was found filled with fecal matter and epithelial debris, and near the extremity, apparently, effused blood. The ovary was brought up and amputated at its proximal border. The peritoneum about the tube was congested but the tube was otherwise normal. The left ovary and tube were normal to the touch.

There had been no rupture, nor had there been an extension of the pathologic process through the peritoneal covering of the appendix, but can we doubt the conclusion that soon there would have been a rupture with escape of the virulent bacteria into the abdominal cavity? Can we reasonably look for any medical treatment at present available to prevent this rupture? Can any one doubt the seriousness of the condition which a rupture of this appendix would have initiated? Can any one doubt the wisdom of treating this case surgically rather than medically?

By removing the appendix before rupture the wound could be closed without drainage, thus insuring a speedy convalescence, lessening materially the dangers of a future hernia, saving the patient much discomfort, and rendering her future safe. Was she for a moment in a safe condition before removal of this distended appendix?

Can we not say the same of nearly every case in which we can diagnose appendicular irritation? Many apparently recover, others go on to a time when operation is always dangerous, often fatal. If not fatal, rupture, abscess, open operation, or prolonged and painful convalescence may follow and the patients are subject to all the dangers of complications known to occur from a large or small collection of pus in the abdominal cavity.

How can we best meet the exigencies of this large class of cases? I conclude, unhesitatingly, by early operation in every case of this latter type. It is better to operate upon some few patients who might recover without than to take the chances of rupture, peritonitis, abscess with the danger of rupture into the abdomen, general sepsis, metastatic abscess in almost any organ, septic pneumonia, perforation of the bladder or bowel, fecal fistula, obstruction of bowel and many other complications which have followed delay. Can we in any other condition we meet find a more fruitful field for prophylaxis than is offered us in an early operation upon these unruptured cases? I conclude that to prevent the formation of pus whenever possible is the best way to conserve our patient's welfare by avoiding all the dangers incident to pus formation and that an early operation in these cases is true conservative surgery.

HISTORICAL SKETCH, ETIOLOGY AND PATHOLOGY OF DIABETES MELLITUS.*

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DIABETES MELLITUS is a disease characterized by the presence of grape-sugar in the urine. This glycosuria must continue for an indefinite length of time, and must also be present when carbohydrates are taken only in moderate quantities or not at all. The ingestion of certain poisons, the effects of nervous irritants, injuries to the nervous system and lesions of the body are often followed by the presence of sugar in the urine but this is of a short or temporary duration and should not be classified under the term diabetes mellitus. "By the term diabetes mellitus," says VON NOORDEN, "is understood a disease in which the capacity of the organism for burning up sugar is morbidly depressed." Under an ordinary mixed diet, should the assimilative power of carbohydrates be slightly or momentarily impaired and should this be followed by the transitory presence of traces of sugar in the urine, we have a condition which is termed simply glycosuria. The mild stage of diabetes mellitus consists in the presence of sugar in the urine, which disappears after decreasing or withdrawing carbohydrates from the food. The severe stage of diabetes mellitus is characterized by the excretion of sugar even after a total withdrawal of all carbohydrates from the diet.

HISTORICAL.

From India comes the earliest account of the sweet taste of diabetic urine. References are also found in the writings of Grecian, Roman, and Arabian physicians. CELSUS, in the beginnig of the Christian era, described some of the most obvious symptoms. THOMAS WILLIS, an English physician, was the first European writer to note the sweet taste of the urine. In the "Pharmaceuticæ Rationalis," published in 1679, he says: "GALEN knew only two sick of it; but in our age given to good-fellowship and a guzzling down chiefly of unalloyed wine, we meet with examples and instances enough, I may say daily, of this disease." This author also expresses the opinion that it is a disease of the blood and not of the kidneys, and refers to the nervous system as the main cause of the disorder. MATTHEW DOBSON, in his "Medical Observations and Inquiries," published in 1799, showed that the urine actually contained sugar, applying and naming the fermentation test as a proof. Dover's powder is mentioned as one of the drugs used in the treatment. In 1797, ROLLO published the first detailed account of diabetes mellitus, in which work the dietary treatment was first spoken of. In 1825, GREGORY pointed out the difference between diabetes mellitus and diabetes insipidus. BERNARD, in 1847, demonstrated that glycosuria could be produced by puncturing the floor of the fourth ventricle. In 1886 VON MERING discovered phloridzin diabetes. Three years later VON MERING and MINKOWSKI demonstrated that severe diabetes can be produced by the total extirpation of the pancreas. Since this time the study of this disease has resulted in the accumulation of extensive literature, and many valuable contributions have been made by experimental investigations.

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* Read before the DETROIT MEDICAL SOCIETY.

EXPERIMENTAL DIABETES.

Many years ago BERNARD demonstrated that sugar could be produced in the urine by puncture of the floor of the fourth ventricle. This point of puncture is situated between the deep origins of the vagus and auditory nerves, about the region of the vasomotor center. It has been shown that if a rabbit is starved before this operation so that the liver contains little or no glycogen, little or no sugar will be found in the urine; on the other hand when the animal is well-fed and the floor of the fourth ventricle is then punctured, the urine in the course of one or two hours will be increased in quantity and a considerable amount of sugar will be present. This condition lasts for one or two days, after which the urine again becomes normal. It has also been shown that the better the rabbit is fed the more glycogen will be found in the liver and the greater amount of sugar will be present in the urine. This fact tends to show that by puncturing the floor of the fourth ventricle the glycogen is converted into sugar and then passed into the general circulation. Other operations upon the nervous system have also been followed by glycosuria, but PAVY states that the glycosuria in these cases is only temporary in character and is prevented by the injection of carbonate of soda into the circulatory system previous to the experiment.

Extirpation of the celiac plexus.—Some writers regard the celiac plexus as the seat of lesion in diabetes. After a series of experiments on dogs LUSTIG notes the following: There was a temporary glycosuria, fall of temperature below normal, slowing of respiration, and later albuminuria. Acetone was constantly present until death which occurred by coma. No abnormality was seen in the other organs.

Phloridzin diabetes.—VON MERING discovered, in 1886, by administering phloridzin to dogs that he could produce diabetes in these animals. "Phloridzin," according to WILLIAMSON, "is a substance met with in the bark of the trunk and root of apple, pear, plum and cherry trees." By adding dilute acids and boiling, it is changed into phlorose and phloretin, the first being a form of sugar which reduces copper solutions, and the latter being the only product which causes the glycosuria. Phloridzin may be administered internally or hypodermically. Given either way, the specific gravity of the urine is raised, and sugar in the form of glucose is found.

This drug does not give rise to a permanent diabetes, as the glycosuria disappears on its withdrawal. On the other hand, should the drug be continued the animal loses weight and finally death supervenes. Acetone and betaoxybutyric acid have been found in the urine, and if this is the case symptoms of diabetic coma have been observed. It has been clearly demonstrated that phloridzin has no effect on the pancreas in regard to the excretion of sugar and that the sugar excreted is formed from the albumin of the body.

Pancreatic diabetes.—In 1889, MINKOWSKI and VON MERING showed that the total extirpation of the pancreas in animals was followed by an intense form of genuine diabetes. These investigators showed further that in a large number of cases of diabetes in man the pancreas is diseased. They also noted the fact that when a portion of the pancreas was left within the abdomen, or when after the total extirpation a portion of the pancreas was grafted under the skin of the abdominal wall external to the peritoneal cavity, diabetes did not occur. Furthermore, should this transplanted portion be removed at a later time diabetes in its most severe form would follow. After a complete extirpation of the pancreas the subcutaneous injection of freshly prepared pancreatic extract and also the feeding with fresh pancreas have no effect upon the excretion of sugar. In these cases also the use of jambul had no apparent effect. Acetone, oxybutyric acid, and diacetic acid were occasionally met with in the urine. Up to the present time there is no definite theory regarding the presence of sugar in the urine following the total extirpation of the pancreas. It has been shown that the ligating of the pancreatic duct does not cause glycosuria. Neither do lesions of the solar plexus or the removal of the celiac plexus produce diabetes. The glycosuria is not due to an increased flow of arterial blood to the liver. This is seen by the fact that the arterial supply of the liver is the same in an animal in which the entire pancreas is extirpated and in an animal in which the pancreas is totally removed and a portion of the same grafted beneath the abdominal wall. All these experiments show that there is a specific function of the pancreas which prevents diabetes, but what this is is not known. Some believe it to be an internal secretion of the organ, and others that there is a special ferment in the pancreas.

Alimentary glycosuria.—The presence of a trace of sugar in the urine of a healthy individual is admitted by many authorities, but the ordinary tests are not sufficiently delicate to detect it. Glycosuria in a healthy man can be produced by administering a certain quantity of sugar upon an empty stomach. This condition makes its appearance from three-quarters of an hour to an hour after the ingestion of the sugar and continues from one to three hours. The sugar which appears in the urine is the same as that given. Starches taken in the same manner are ineffectual.

Puerperal lactosuria.—Several theories have been advanced to explain this condition. The first was that there is resorption in the mammary glands, the milk sugar being taken up by the blood, and excreted unchanged by the kidneys. Later it was shown that any condition interfering with the proper removal of the milk, as in cases of excoriation of the nipple, mastitis, or death of the infant, may produce this engorgement. A hypersecretion of milk, the mother having a sufficient quantity to nurse two children instead of one, may cause this affcction. In some cases of suppuration of the breast, WILLIAMSON has found a substance in the urine which has the power to reduce Fehling's solution, but which gives a negative result with yeast. Nevertheless he believes this to be lactose.

Drugs which are said to produce glycosuria.—When, after the administration of certain drugs, a reduction of Fehling's solution is exhibited, it is necessary to obtain some confirmatory test to know whether the reduction is due to a reducing agent or to glucose. The following drugs will serve the purpose: Hydrocyanic acid, curare, carbon monoxide, amyl nitrite, chloral hydrate, opium, arsenic, mineral acid, mercury and phosphorus. These drugs must be given in large or toxic doses to produce this condition.

ETIOLOGY.

Common to all civilized communities, diabetes is probably more often met with in southern Italy, India and Sweden than in other countries. In the first two places named the diet of the people is composed largely of vegetable and saccharine foods, while in the third the inhabitants do not to any excessive degree indulge in carbohydrates. In Germany the disease is more common among the wealthier than among the poorer people. In Japan it is not often met with.

The Hindoo of all races is the most susceptible to the disease. The extreme nervous temperament, the sedentary mode of life, the high intellectual culture, the diet rich in carbohydrates, and the early marriage of these people may account for this prevalence. The Hebrew race next to the Hindoo is especially predisposed to this disease. The highly nervous constitution and the close attention of these people to their professional and mercantile pursuits may be responsible for its great frequency among them. As to sex, males are more often afflicted with this dystrophy than females. Diabetes occurs at any age. It has been observed in nursing infants. When it occurs in children, heredity can often be traced. Other members of the same family frequently suffer from it. A rapid and fatal course is the general result of the disease when it appears in children and young people. The rate of the frequency of the dystrophy increases as the person grows older until the fiftieth year, when it reaches its highest point. After the sixtieth year the disease again becomes less frequent. In extreme old age death from diabetes is rare, the patient generally succumbing to some intercurrent disease.

Heredity is an important factor in the etiologic role of diabetes. **Williamson** in one hundred consecutive cases found evidence of heredity in thirteen. Often members of the same family, brothers and sisters and children of parents suffering from this disease, are diabetic. At other times a family history of gout and obesity can be elicited.

The credit of drawing attention to the possibility of its contagion is due to **Schmitz**. In his experience, of two thousand three hundred and twenty cases, twenty-six instances are mentioned in which healthy individuals became diabetic after having lived continuously in close relationship with or after having cared for a diabetic patient. In no instance could heredity be traced, nor was the last person attacked a blood relative to the first. The patients thus attacked never suffered from gout, nor had they indulged in sweets to any great extent. This view has been strongly contested by a number of observers. **Williamson** explains this supposed infection as due to strain and anxiety on the part of the person caring for the patient during his long illness.

Diabetes, as I mentioned before, in the experience of many observers, is more frequently found among the well-to-do and cultured classes than among the poorer people. Intellectual efforts, mental excitement and psychic influences are predisposing causes.

Infectious diseases are often looked upon as etiologic factors in this disorder, but there is very little data concerning this. In a number of observations patients who slowly had been convalescing from certain affections were seen to suffer from diabetes. In most of these cases, however, it was found that the glycosuria was present prior to the attack. Notwithstanding this, it is but reasonable to assume that acute infectious disease may cause diabetes in the same manner that organic affections of the heart, kidney, lungs, liver, et cetera often follow these maladies. It is, therefore, possible for secondary changes to occur in the pancreas.

Obesity and diabetes are closely related. The latter generally follows the former, which exists for a number of years before sugar appears in the urine. When this condition occurs after the fourth decade of life the prognosis is favorable, but prior to this time the outlook is gloomy.

Gout and diabetes are often intimately associated. "Often typical gout," says VON NOORDEN, "occurs in middle life; later the attacks cease and glycosuria appears. Again, cases are observed in which attacks of gout alternate with glycosuria. In a third group, symptoms of gout and glycosuria are present at the same time."

Frequently a close relationship of diabetes to diseases of the nervous system is seen. Whether the nervous manifestations are primary or secondary is often difficult to say. Cerebral lesions more frequently than spinal or peripheral alterations are followed by diabetes. This dystrophy is also found among the insane. The earlier diabetic symptoms follow injuries to the head and the greater the probability that there previously were no symptoms of the disease, the more likely it is that the glycosuria is due to the accident. Injuries to the head more frequently than lesions of other parts of the body are followed by diabetes. In a large number of patients, most of whom were emaciated, the pancreas, on examination, was found to be diseased. In other cases wherein there were pathologic conditions of the pancreas no trace of sugar was present in the urine, while in others in which death was caused by this disease, no morbid changes were observed.

Syphilis, by its various manifestations upon the nervous system and the different organs of the body, may cause diabetes, but very few cases of this kind have been recorded.

Sunstroke, starvation, rich diet, alcoholism, lightning stroke, exposure to inclement weather, malaria, and sexual excesses may cause the disease. A severe and cold climate tends to increase the frequency of the disease, while a mild and warm one tends to diminish it. The mortality among diabetics is greater during the cold than during the warm season. Glycosuria, according to statistics, is undoubtedly becoming more prevalent.

PATHOLOGY.

There are no direct pathologic conditions associated with diabetes. The morbid changes found in most cases are generally secondary to this disease. Without a clinical history or without examinations of the blood and urine, it is impossible in postmortem examinations to diagnose a case of diabetes either by macroscopic or microscopic changes.

In those cases wherein the liver is apparently at fault, a slight enlargement is frequently found. The arteries, but not the veins, are distended, and there is an active hyperemia present. Fatty infiltration and degeneration, hypertrophic and atrophic cirrhosis are met with. The spleen is often hyperemic and somewhat enlarged. The pancreas is found diseased in one-half of the cases. The other changes found in this gland are cancer, atrophy, abscess, cirrhosis, fatty degeneration, et cetera. As partial removal of the pancreas is not followed by diabetes it seems improbable that only slight pathologic lesions of this gland can produce this disease.

Macroscopic and microscopic examinations often fail to disclose any pathologic changes of the nervous system. In some cases cerebral edema and hydrocephalus were found. Other changes were aneurysm, sclerosis, atheromatous processes, hemorrhagic extravasations and fatty degeneration. The changes which are seen by the naked eye are mostly situated about the floor of the fourth ventricle and in the medulla. Tumors of the pituitary body have been accompanied by symptoms of glycosuria. In most cases the spinal cord is normal.

There remains now but to discuss the pathologic conditions found elsewhere. These consist in the changes found in the heart and blood-vessels, the lungs, the kidneys and the alimentary tract. These conditions are all secondary.

Hypertrophy and dilatation, atrophy and degeneration of the heart have been described. Valvular disease when present is generally due to a complication as also is arteriosclerosis.

In the lungs the following complications are found: Pulmonary phthisis, fibroid phthisis, catarrhal and croupous pneumonia, chronic bronchitis and emphysema.

The kidneys are seldom affected during the course of the disease. A faint trace of albumen may be present for a long time without the appearance of any renal change. When the albuminuria is due to nephritis other symptoms will make their appearance and, the pathologic conditions then found will be similar to those found in these diseases.

In the stomach we have dilatation, swelling and redness of the gastric mucosa and thickening of the walls. In the intestines there is acute and chronic intestinal catarrh, and tuberculosis of the intestines. When the latter condition is present the mesenteric glands are often enlarged.

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COURSE AND TREATMENT OF DIABETES MELLITUS.*

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IT is the purpose of this essay to present briefly, a résumé of the most reliable of recent literature arranged in form available for convenient application in general practice, with some observations made in clinical studies and deductions drawn from careful perusal of the subject literature.

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*Read before the DETROIT MEDICAL SOCIETY.

SYMPTOMS.

It is very important that the classic symptoms of diabetes mellitus be kept familiarly in mind, not because it is at all difficult to make a diagnosis, but as a safeguard for suggestion of its probable existence.

Glycosuria is the one symptom of greatest prominence, but depending as it usually does upon urinalysis for recognition it is not the first symptom of suggestion for diagnosis. The tripod, taken in the following order, (1) polyuria, (2) inordinate thirst, (3) inordinate appetite, will prove in most cases the first aid to diagnosis, though the first symptoms complained of will usually be thirst and frequent micturition. There is no constant priority of certain symptoms, but a very great predominance of some.

Not infrequently emaciation, with its accompanying loss of physical strength, will first call forth attention, or furuncles and carbuncles in the skin, itching of the skin, dryness of the fauces with viscid saliva.

The later symptoms comprise all of those appearing early, only they are manifested in severer form. Constipation is not infrequently very troublesome. Gastric and intestinal disturbances appear at intervals, as may also phthisis, pneumonia, gangrene, disturbances of the special senses, eczema, neuritis, cataract, and increase of glucose (five hundredths to fifty-seven hundredths per cent.) in the blood.

The urine shows distinct changes. The total quantity is greatly increased varying from four to forty pints. Specific gravity varies from one thousand and ten to one thousand and seventy. The color is pale. The odor and taste are sweet. The reaction is acid and sugar is found in amounts of one-half to fifteen per cent. Albumen may frequently be found. Acetone, diacetic and oxybutyric acids are often present. The last named is of greatest significance and is found preceding coma and death for a few days or weeks. Diacetic acid indicates a gravity next to oxybutyric.

The course of diabetes is variously stated in the text-books as running from a few days in children to twenty years in adults. The writer believes that the duration is considerably longer than that above stated. If a case were seen in its incipiency, even in very young children, and carefully treated, it is believed thas the minimum time would be at least three months, and the maximum from four to five years. In case number four reported in this paper, the age was five and a half years and the duration over three years. In cases one, two and three the ages were twelve years and the duration up to the present is: (1) Eight months with her present health normal and toleration for carbohydrates nearly perfect. (2) Thirteen months, health good and toleration good excepting for pure table sugar. (3) Nineteen months' duration.

In the early diagnosis of diabetes we can definitely prolong life and ameliorate very materially nearly all symptoms.

DIAGNOSIS.

The diagnosis of diabetes mellitus is usually very easy. The classic symptoms are so many in number and the presence of sugar is so constant that no difficulty is experienced, the urinalysis proving beyond doubt or question the condition present. Urinalysis ought to be used much more frequently as an aid to diagnosis in general work than is done by many practitioners.

It is necessary to select a set of reliable tests and then become familiar with them by repeated scientific use.

TESTS.

It is necessary to be familiar with at least three of the most reliable sugar tests. If we were dealing with the question of sugar in simple aqueous solution, one reliable test would suffice, but urine holds in solution different salts which frequently interfere with the copper reducing power.

A specific gravity of one thousand and thirty or over and a total of more than fifty ounces in twenty-four hours is sufficient to suggest the application of determining tests.

There are some precautions which should be kept in mind when testing for sugar, or we may be misled in results.

(1) Protoxide of copper is occasionally reduced by other organic substances, of which the most important, and practically the only source of error is uric acid, the presence of which may be suspected when the urine is dark colored or scanty.

(2) It is sufficient to boil the suspected samples for a half minute—other organic substances may be reduced by prolonged boiling.

(3) It is necessary to obtain a yellow or red precipitate. The decolorization of the test solution, if diluted, almost always takes place with normal urine.

(4) The reduction of the cupric oxide is hindered by albumen, hence it is always wise to apply the heat test to the sample before the sugar test. The most practical and most reliable tests are, perhaps (1) Fehling's modification of Trommer's test; (2) Fermentation test (Robert's method); (3) Bismuth test (Nylander's modification).

The Fehling's test is best kept in equal volume solutions made by dissolving first thirty-four, and six hundred and fifty-two thousandths grains of chemically pure crystallized sulphate of copper in five hundred cubic centimetres of distilled water, and second, one hundred and seventy-five grains of chemically pure crystallized neutral sodic tartrate in four hundred and eighty grains of caustic soda solution of specific gravity one and fourteen hundredths with distilled water to make five hundred cubic centimetres. Equal quantities of the solutions are added together, then diluted with four times their bulk of water, and boiled for a few seconds. If the solution remains clear, add the urine drop by drop until an equal volume of urine has been added. If no precipitate occurs, sugar is absent. A simple quantitative estimate is made by adding to one cubic centimetre of the four times diluted copper solution, urine in one-tenth cubic centimetre quantities until one cubic centimetre has been added. If all the blue color is removed the urine will contain just one-half of one per cent. If more urine is required the percentage of sugar will be less, and if less is used and decolorization occurs the quantity of sugar is proportionately larger.

Doctor Roberts has shown that every degree in specific gravity lost in fermentation corresponds to one grain of sugar per fluid ounce. Thus, if before fermentation the specific gravity is one thousand and fifty and after fermentation one thousand and twenty it will have contained thirty grains to the fluid ounce. The method is as follows: Four ounces of the suspected urine are put into a twelve-ounce bottle, and a piece of yeast the size of a small walnut is added, after which the bottle is closed with a nicked cork so that the carbonic acid gas may escape. Beside it is placed a four-ounce bottle of the same urine. Both are kept at a temperature of from 65° to 70° Fahrenheit for twenty-four hours. At this time the speific gravity of both samples is taken and the comparison made. The percentage of sugar is roughly estimated by multiplying the number of degrees lost by twenty-three hundredths.

The Nylander modification of the bismuth test is made as follows: Basic bismuth nitrate, two grains; sodic potassic tartrate, four grains; sodic hydrate (purified sticks), eight grains; distilled water, one hundred cubic centimetres are mixed and filtered. One cubic centimetre of this is added to ten cubic centimetres of urine and boiled for two minutes in a test-tube. A light gray to black precipitate usually indicates glucose.

A very important aid in diagnosis is obtained by examination of the blood. [1]BREMER has found that the red corpuscles of diabetic blood cannot be stained with anilin colors in the same way as those of normal blood. In the latter they are distinctly acidophilous, while in the diabetic blood they become basophilous; they no longer take up eosin, the preferred color of the normal blood corpuscles. This is not pathognomonic when independent of glucose, as it may also take place in leukemic blood. [2]The increase of glucose in the blood is from a normal quantity of five hundredths or fifteen hundredths per cent. to two-tenths, and, in extreme cases, to fifty-seven hundredths per cent. The specific gravity may rise from the normal one thousand and twenty-eight to one thousand and thirty-three. [3]In general there is an exact relation between the amount of sugar excreted in the urine and the amount contained in the blood.

PROGNOSIS.

It is difficult to give a prognosis of diabetes in general, as each individual case is almost a law unto itself. Age, severity of the form, the application of proper treatment, and the character of the complications will determine the prognosis.

TREATMENT.

The treatment of diabetes mellitus is one of the most interesting fields of study. It can be said that treatment is both valuable and valueless; valuable from the fact that correct treatment applied to either mild or severe forms ameliorates symptoms, effects cures in selected cases, and prolongs life in every case; valueless, because in well-established forms there is veritable failure to stop the certain unfavorable progress. It is observed that medicinal, without dietetic treatment, is practically valueless, and that dietetic without medicinal treatment is signally beneficial, though we have selected cases that are often very much benefited by medicine. When we prescribe any drug in diabetes we are groping in the dark, and must learn by experience in each individual case whether we are following the right path or not. Dietetic measures afford the best known aids in treatment, yet cases of swiftly advancing fatality are not turned aside even when the dietetic difficulties are vigorously overcome. The simile is that of treating a sick man almost solely by ordering and securing his relief from work. This is right so far as it goes, but if his affliction is independent of the work he follows we will gain but little by rest.

Is the problem of restoring the liver, pancreas, kidney, et cetera, what we must meet in the etiologic treatment, or is it that we must discover some antitoxin or antidiabetic medicament?

We are doing nothing more at present than applying the rest cure in various ways.

The first great question in treatment is what is the carbohydrate consuming power of the body? If it is below normal the unfailing index is sugar in the urine, which represents so much waste that is immensely expensive to the body economy. We direct our efforts toward the conservation of this waste. We must have a certain basis for the calculation of the required diet. The measure of the oxidation processes in the body required to raise one kilogram of water ten centimetres is one calorie. Investigations have shown that each one of our nutritive substances by its consumption in the body produces an exactly definite amonnt of heat, or the mechanical equivalent of this measure in the form of energy. In order that the body may maintain its metabolic equilibrium the output must be made up by an equivalent income of nutritive material, otherwise emaciation takes place. The calculation of the individual requirement is easily made when the following data is used: In twenty-four hours an adult man consumes from thirty to thirty-five calories while at rest, thirty-five to forty calories when in motion, and forty to fifty calories when in moderate labor, per kilogram of body weight.

One gram of albumen yields four and one-tenth calories.
One gram of carbohydrate yields four and one-tenth calories.
One gram of fat yields nine and three-tenths calories.
One gram of alcohol yields seven calories.

The nutritive needs are estimated by multiplying the body weight in kilograms by the calories. If sixty kilograms equals weight and thirty-five equals calories, the heat-consuming power per kilogram then is $60 \times 35 = 2{,}100$ total calories. If one hundred and fifty grains of sugar were excreted daily $150 \times 4.1 = 615$ calories.

If 2300 calories equal daily average food,

$2300 - 613 = 1685$ the value of food taken.
$2100 - 1685 = 415$ calories loss.

The body must have consumed of its own substance to the value of four hundred and fifteen calories. This loss must be made up from albuminates and fats.

Treatment resolves itself easily into the dietetic, the hygienic and medicinal.

We cannot institute a systematic régime of treatment, for each case must be carefully studied and its individual requirements met in a scientific way. Results will justify certain modifications of treatment which must be made when indicated.

As observed before, diet is the most important factor in treatment, and in all diabetics the sugar assimilating power is interfered with; therefore, the ingestion of carbohydrates must be limited to meet the individual sugar-consuming function of the body. The general rule to be observed is to advise a diet of meat, fish, eggs, green vegetables — particularly those which contain but little starch, also salad, cheese, nuts, et cetera. [4] "The maintenance of the patient's strength is of more importance than the loss of more or less albumen or sugar."

[5] "Nearly all cases of diabetes show fluctuations in twenty-four hours. In mild cases these maintain a certain regularity, there being an increase in the forenoon and again in the evening. Generally, diabetics cannot

assimilate the carbohydrates which are taken for breakfast on an empty stomach, but they may assimilate these substances if taken for luncheon or dinner." [6]" Young people bear the withdrawal of carbohydrates much better than do old people." [7]A rigid proteid diet should be prescribed for a little time and then tests can be made with articles containing starch or sugar until the patient's tolerance is ascertained. [8]It is of greatest importance that we keep a definite record of food quantities, urine measurement, sugar estimate and body weight. [9]It is not sufficient to say to the patient " Do not eat starchy food and sweets, and confine yourself to meats and fats." But a diet table must be furnished with a sufficient number of available calories., You are referred to standard diet tables prepared by VAUGHAN[10], VON NOORDEN[11], et cetera.

Some healthful diet notes are observed as follows:

(1) [12]A diet without vegetables may cause acid intoxication.

(2) [13]The following carbohydrates seem to have little influence on glycosuria, namely: levulose, inulin and mannite.

(3) [14](*a*) Milk is not so injurious as is supposed, though it has been shown to generate glycosuria in some cases.

(4) (*b*) Potato can be used to replace bread at two meals of the day, and is often eaten with pleasure. Six ounces contain only from three hundred and fifty to six hundred grains of starch.

The hygienic treatment is second only in importance to the dietetic.

VON NOORDEN[15] considers the general hygienic measures under the following heads: (1) Psychic treatment. (2) Muscular exercise. (3) Care of the skin—bathing. (4) Treatment of constipation. (5) Travel. It is of utmost importance for the physician to have the complete confidence of his patient, and this is, perhaps, best secured by demonstrating to him a keen, intelligent and comprehensive knowledge of his malady. To this should be added a plain, straightforward statement of such necessary facts as are required for an intelligent understanding of the conditions by the patient. With the confidence of a patient gained the physician will be able by suggestion to control the mind from tendencies to pessimistic and melancholic conditions, and to enforce rules for the regulation of diet, exercise, et cetera. [16]An easy life free from worries is best for the diabetic. The skin functions should be excited by means of tepid baths. He should wear flannel or silk next to the skin, and he should take as much exercise in the open air as he can endure without undue fatigue.

Constipation is best cared for by a well-regulated mode of living and saline or alkaline mineral waters. If the patient is rich and desires to travel, it is wise to give his inclination encouragement.

The medicinal treatment of diabetes mellitus is a most fascinating study. The number of drugs mentioned by different writers as valuable for the treatment of diabetes is very large, but there is not a single remedy which can be classed as antidiabetic. It is true that selected cases may possibly be cured by medicinal measures, for example, certain cases of neurogenous and syphilitic character. Lepine[17] divides substances into those (1) which increase glycolysis, (2) which diminish the production of glycogen, (3) which possess a somewhat unknown effect. In class one, he puts alkaline waters; two, opium, antipyrin, salol and sambul, et cetera; three, bicarbonate of soda, arsenic, et cetera.

The drugs which have proven of greatest benefit in the hands of the majorit of investigators are, arsenic, opium, bromid of potassium, alkalies in the form of alkaline mineral waters, salicylate of soda or citrate of potassium.

It is exceedingly satisfactory to note that some progress has recently been made in the treatment of coma by the injection of saline fluid, thirty-five ounces, one-tenth of one per cent. of sodium chlorid, into the median cephalic vein, followed by repeated injections and enemata until about twenty pints were used when symptoms disappeared. ROGET and BALVAY have collected twenty cases and recovery was reported in two.[18]

The writer suggests a trial of the saline fluid as a systematic medication for diabetes mellitus.

The following report of four cases occurring in children is made:

Case I.—EVA P., aged twelve, was seen first by me at my office June 30, 1900. The following symptoms were complained of as having been manifested for about six weeks. Frequent urination, loss in weight and strength, distinct thirst, dryness of the throat, itching of the skin, dyspeptic irritations, paleness of the complexion, irritability, nervousness, peevishness and dislike of her school work. Urine analysis showed the quantity to be sixty ounces; specific gravity one thousand thirty-eight; reaction acid; urea, one and three-tenths per cent.; sugar, three per cent. Treatment given included a withdrawal of the carbohydrates, a program of energetic outdoor play-life, a triweekly warm bath, and arsenic one-hundredth grain three times daily. The results were gratifying. In a few days the quantity of sugar began to lessen and the general symptoms were improved. In six weeks a decided gain in weight had taken place, and she was able to take small quantities of carbohydrate food without harm. Improvement has continued, and at present she is living upon an unrestricted diet, excepting that free sugar is prohibited. Some hesitation must be observed in placing this case in the list of diabetes mellitus, as time is required for a confirming diagnosis.

Case II.—ROY W., aged twelve, came under my observation January 5, 1900. His mother was reported to have had diabetes mellitus with complications, the latter being ascribed as the cause of her death. More definite information could not be obtained. The following symptoms were recited: Severe headaches, loss of flesh, ravenous appetite, great thirst at frequent intervals and sudden outbursts of temper. Urine analysis: Quantity of urine, sixty-four ounces; specific gravity one thousand thirty-seven; reaction, acid; sugar, four per cent. Treatment: Antidiabetic diet, vigorous outdoor exercise, three minims of Fowler's solution of arsenic three times daily. Improvement has been very marked, but the gain in flesh has been slight. Tolerance of carbohydrates is good.

Case III. — WALTER D., aged twelve. History: Father healthy, mother gave a history of diabetes in obesity. In March, 1898, he received a severe blow upon the vertex from a falling plank. The skull was not fractured. In June, 1898, when the weather was very warm, he suffered from severe headaches and fainting spells so that he could attend school only one or two days a week. These symptoms were of frequent occurrence, if close mental work was attempted. Urinalysis: April 6, 1899, when he first consulted me, the quantity of urine was eighty ounces; specific gravity one thousand forty-four; reaction, strongly acid; urea, one and four-tenths; sugar, eight per cent. Repeated examinations gave marked variability of quantity, forty to sixty ounces; specific gravity one thousand thirty to one thousand forty-six, and one-half to eight per cent. of sugar. Treatment: Three grains of phenacetin and one-eighth grain calomel were given three times daily, with antidiabetic diet. Improvement was marked when the diet was strictly followed, but frequent indulgences in carbohydrates caused just as frequent excretions of sugar. The patient passed out of my hands in eight months by his removal from the city, making further history impossible. The prognosis in this case was very unfavorable.

Case IV.—HULDAH B., age five and one-half years, whose father was strong, healthy and of moderately stout physique, a clergyman by profession; but whose mother was not very strong and of neurotic temperament, came under my care. The other children were healthy. No member of the family, either immediate or remote, had ever had diabetes mellitus. In October, 1896, attention was first drawn to her case, by the manifestation of an inordinate thirst and appetite, incontinence of urine and loss of flesh. During December, 1896, she grew thinner and became nervous, petulant, peevish, tired easily and did not enjoy school. In January, 1897, she had a light attack of measles which was without complications. It was noticed that she lost flesh more rapidly from this time, and a physician was consulted. He failed to recognize the symptoms, as the temperature, complexion and tongue were normal, and said she would be all right soon. In February, another physician was consulted, who, after a careful and thorough examination, made the diagnosis of diabetes mellitus, well developed with quantity of sugar fifteen (?) per cent. Repeated examination showed constant large quantities of sugar. A strict antidiabetic diet was commenced, with the administration of iodid of iron. On the eleventh day, February 15, the sugar entirely disappeared from the urine. Her disposition became cheerful and she seemed an entirely different child after five weeks of continual freedom from glycosuria. Toasted bread was allowed for a day or two, but sugar again appeared. The special diet consisted of gluten biscuit, milk *ad libitum*, meats and nuts, with an occasional sour apple, but about April 1, sugar again appeared and the apples were withdrawn. Tests were frequently made with the apples and each time sugar would appear or disappear as this article was used or withdrawn. The improvement was quite marked. The health seemingly became perfect, flesh was taken on, growth was marked, and this condition remained constant during a period of about seventeen months. Tests were made every two or three months with toast, which was allowed for two or three days, when sugar would appear each time. Twice, intestinal intoxication, lasting about three weeks, became apparent, but responded to the usual treatment. In May, 1899, a slice of toast, some potato and onions were allowed at a meal, and the following record was observed:

TWENTY-FOUR HOURS.	AMOUNT OF URINE.	SPECIFIC GRAVITY.
Tuesday, May 9,	54 ounces,	1030.
Wednesday, May 10,	42 ounces,	1024.
Thursday, May 11,	74 ounces,	1026.
Friday, May 12,	60 ounces,	1030.
Saturday, May 13,	76 ounces,	1028.
Monday, May 15,	74 ounces,	1033.
Tuesday, May 16,	66 ounces,	1030.
Wednesday, May 17,	82 ounces,	1030.
Thursday, May 18,	82 ounces,	1032.

TWENTY-FOUR HOURS.	AMOUNT OF URINE.	SPECIFIC GRAVITY.
Friday, May 19,	60 ounces,	1031.
Wednesday, May 24,	30 ounces,	1032.
Friday, May 26,	38 ounces,	1030.

During July she was at the Saint Louis, Michigan, Mineral Springs, but returned without improvement. In August, a troublesome abscess appeared in the temporal region causing her to lose strength and appetite. When her condition improved a free diet was allowed, excepting that pure sugar was excluded. In September, she returned to school. In October, she became thin and listless and lost interest in everything. On November 1, severe gastric symptoms appeared, respiration became greatly embarrassed and coma quickly followed. She died November 3, 1899.

The following urinalysis is submitted as showing an average of frequent examinations when on antidiabetic diet.

Amount, 50 to 80 ounces.
Specific gravity, 1032.
Reaction, acid; urea, 1.3 to 1.4 per cent.
Sugar, 0 to 3 per cent.

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831 FORT STREET WEST.

RECENT EXPERIENCE WITH SMALLPOX.*

BY THEODORE SCHMALZRIEDT, M. D., WOODMERE, MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

MY aim in presenting this paper is to give an illustrative dissertation on a disease with which but a limited number of the medical profession have of late years come in contact. The rarity of its occurrence adds to the interest with which we note its various phases when opportunity offers.

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* Read before the DETROIT MEDICAL SOCIETY.

I have within the past eight months had the good fortune to witness twenty-seven cases of smallpox in the various forms of variola discreta, variola confluens, variola pustulosa hemorrhagica, varioloid, and variola *sine eruptione*. I have watched some of these cases through the periods of incubation, papule-, vesicle-, and pustule-formation, and dessication, and have diagnosed its previous existence in several instances by the characteristic "brown spots" which remain for a considerable length of time even when there is no pitting. What may be of interest in these cases I will attempt to note briefly.

The recent epidemic, types of which prevailed all over this and the neighboring states, was especially noted for the unusual mildness of the disease, so that not only the laity, but experienced medical men even, have doubted whether this was the genuine disease, smallpox, or only an aggravated form of chickenpox. The fact that exposure to varicella cannot produce variola, and the further fact that these mild, doubtful cases have given rise to some very severe cases of genuine variola, have dispelled every doubt from my mind that even the mildest of them was real smallpox. Of the twenty-seven cases seen, eleven were cases of variola discreta, one was a case of variola confluens, one was a case of variola pustulosa hemorrhagica, and fourteen were cases of varioloid.

The source of infection I ascertained in five cases of variola and in all cases of varioloid—leaving eight cases untraced.

The mode of infection in every case traced was by direct and close contact. I did not see any evidence of contagion having been carried by an intermediate person or object. Anent this, I wish to make a remark as to the possibility of the attending physician carrying the disease among other patients and people. If the attending physician does not care to go to the trouble, or if he has not that conception of the duty which a man in such a position owes the community, to eliminate in every way possible the likelihood of his carrying infection to others, he has no business to attend cases of smallpox. However, the action proposed in some communities to prevent a physician who is treating smallpox from attending other professional cases is "overdoing" the matter. I have enjoyed a considerable practice throughout the five or six months during which I attended smallpox patients, and, am happy to say, that owing to a most conscientious observance of the most minute precautionary measures, there is not the slightest evidence or suspicion that the disease was carried by my person. I have had several demonstrations of communicability by the breath, and exhalations from the skin, but none of communication by infected articles. Authors are agreed, however, that this occurs and that the virus retains its virulence for more than a year. There is some difference of opinion among authors as to whether a case of smallpox can give off its contagion before the appearance of the vesicles. As none of the persons exposed to a case of smallpox prior to the appearance of the eruption took the disease, I have dated the period of incubation in sixteen cases in which I observed it from this stage.

In one case of variola discreta the period of incubation was seven days.

In one case of variola discreta the period of incubation was seventeen days.

In three cases of varioloid the period of incubation was eleven days.

In two cases of varioloid the period of incubation was fifteen days.

In one case of varioloid the period of incubation was seventeen days.

In three cases of varioloid the period of incubation was eighteen days.

In one case of varioloid the period of incubation was nineteen days.

In one case of varioloid the period of incubation was twenty days.

In three cases of varioloid the period of incubation was twenty-three days.

This gives us an average of twelve days for the unvaccinated cases resulting in variola, and an average of seventeen days for the vaccinated cases resulting in varioloid. Twelve days as the average, and nine to twenty days as the extremes, are generally agreed upon.

Of forty-nine persons who had been directly exposed to one of ten cases of variola, two, a child of four and a young lady of eighteen, refused vaccination, yet escaped the disease altogether. Three who were not vaccinated contracted variola discreta. The other forty-four were vaccinated and of these, twenty-nine showed no sign of the disease; of the remaining fifteen, seven ran a typical course of varioloid, six had what might be termed abortive varioloid, that is very little or no rise of temperature, no indisposition, and from two to eight or ten papules which dried up either before or as soon as the vesicle began to form. Of the remaining two cases, one had a severe attack of varioloid with two large patches of the severe confluent type upon her back. There is no doubt that vaccination saved her a most severe attack of confluent variola. The other exposed person had, if there is such a thing—as some authors claim and others deny—an attack of smallpox without an eruption. Of these last two cases I will speak more in detail later, as they illustrate most beautifully the protective influence of vaccination.

A peculiar susceptibility to smallpox seemed to exist in four families in which almost every member had the disease in some form. The reverse was shown in three other families wherein with about the same number of persons exposed for the same length of time only one or two members took the disease. In the first four families of twenty-one persons, sixteen were taken sick, while in the other three families of eighteen persons, only four were taken sick.

Another peculiar fact is that of twenty-seven persons sick with the disease, eighteen were females and only nine were males. Of the whole number exposed thirty were females and twenty-nine were males. The number exposed being almost equal, twice as many females as males were attacked. As to the age distribution of the cases, the following is of interest: Between the ages of two and twelve years, there were two cases of variola and eleven cases of varioloid. Between the ages of sixteen and twenty-seven years there were eleven cases of variola and two cases of varioloid. Above the age of twenty-seven—at thirty-eight there was one case of varioloid. The severity of the disease in these cases seemed proportionate to the time of and the susceptibility to vaccination. Persons vaccinated early and those in whom vaccination became speedily effective, either escaped the disease altogether or had a very light form of varioloid. Those who were not vaccinated until a considerable number of days after exposure and those in whom vaccination became effective only after six or more days had elapsed, showed a greater number attacked and a more severe form of the disease.

During the outbreak I vaccinated and caused to be vaccinated about nine hundred persons, from infants of less than a year to people of the age of eighty and over. Ivory vaccine points were used on about four hundred, glycerinated vaccine lymph on about five hundred persons. Suppurating wounds, intensely swollen arms and glands with considerable febrile disturbance, and slow protracted healing were everyday concomitants of vaccination with the ivory point. With the use of glycerinated lymph, I saw only two suppurating arms. I believe these were infected by the mother's attempt to wipe away the lymph from the children's arms after I had left the house. Though not having a record of these nine hundred vaccinations, my impression is that a larger number became effective from the use of the glycerinated lymph than from the ivory point. Of the forty-four exposed persons who were vaccinated, the ivory point vaccine was employed on twenty-four and the glycerinated lymph on twenty. Of the first twenty-four, eight took varioloid, of the other twenty, five took varioloid. One out of every three vaccinated with ivory point vaccine took varioloid, and one out of every four vaccinated with glycerinated lymph took varioloid. As to the method of vaccination practiced: the previously thoroughly cleansed surface was scarified with a clean lancet until a small quantity of serum exuded. To scarify until a bleeding surface is produced is very undesirable. When serum exudes, the blood-vessels are opened sufficiently for the applied vaccine to become absorbed. A large amount of blood delays the drying of the vaccine and frequently floods it away from the scarified surface. It acts as an intervening obstacle to the prompt absorption of the vaccine into the open blood-vessels. It also is unesthetic, frightens children, and is repugnant to sensitive people; all this without having a redeeming feature in its favor.

In using the glycerinated lymph one must frequently examine the vaccinated surface, otherwise he may be deceived into believing that the vaccination had been ineffective. Do not look for swollen arms, intensely painful glands, rise of temperature, a deeply suppurating wound, and a large, unsightly scar. There will be a slightly raised and very mild inflammatory areola encircling the scarified surface, a small papule, the size of a cherry pit appears, which becomes a vesicle with umbilication, then a pustule, after which it quickly dries up and leaves a small scar.

Several times, supposing my vaccination to have been a failure, I have removed a scab which had formed over the vaccinated surface and found the typical vesicle for which I had been looking. The whole process is gone through without any indisposition on the part of the vaccinated person except, frequently, a slight itching about the vaccinated surface, lasting a few days. The only disadvantage in the use of the glycerinated lymph is its exceeding slowness of drying, which takes from one-half to one and a half hours. This can be circumvented by the use of a protective cone which should be removed after several hours when the lymph has dried. If not removed it will prove a source of irritation. No bandaging is required.

One thing which has strongly impressed itself upon me is, that during the prevalence of smallpox one cannot too closely watch cases beginning with fever, headache, backache and general malaise with seemingly nothing to account for so much disturbance. Several times during this outbreak it occurred that a physician who was called to treat the aforesaid symptoms, administered some antifebrile medicine, and at his next visit finding all these symptoms to have disappeared, left the case as recovered. After three or four days he was again sent for to diagnose a rash, or after five or six days a vesicular eruption, and found a case of smallpox.

One family in my township took advantage of the failure of the physician to make a second visit. After the first alarming symptoms had been banished by the physician's treatment (or as a consequence of the natural course of the disease) they sent him word that he need not call again. Another child took sick, another physician was sent for and the same course pursued in this case. Neither physician could tell at the time that he was treating the initial symptoms of a case of smallpox. The subsequent course of the disease in both cases was that of a mild discrete variola. There being no serious symptoms and the family knowing the nature of the disease and fearing quarantine, the physician was not recalled; the health authorities were not made acquainted with the cases; and they progressed and proved subsequently to have been the source of infection of some of our other cases.

I will now attempt to describe in a general way those cases which showed nothing special to merit attention individually, and which therefore might be summarized as average cases of smallpox.

In the majority of cases no prodromal symptoms were noted. The disease would begin abruptly with chills, rise of temperature, severe frontal headache, backache, sometimes vomiting, and occasionally with diarrhea. These symptoms might disappear in twenty-four hours, or they might last two or three days. The mildness or severity of the initial symptoms proved no criterion to the subsequent course of the disease. Some cases of discrete variola and several of varioloid began with just as alarming symptoms as did the confluent and hemorrhagic cases.

The eruption in all cases of variola discreta appeared on the third or fourth day, in the confluent cases on the second day, thus bearing out SYDENHAM's dictum that "the earlier the eruption, the more confluent the attack." The eruption was at first macular, the redness disappearing on pressure like in scarlet fever, then became papular with a hard shotty feel. This shotty feel was very distinct in the confluent form. In most of these cases there was severe itching from the time of the appearance of the rash until the vesicles were fully formed, which was about the fifth or sixth day, when they were surrounded by a round indurated inflamed base. The vesicles became distinctly umbilicated by the seventh day and turned into pustules on the eighth day when the umbilication disappeared and the pustule assumed a globular shape. In one case this occurred on the seventh day and in one on the tenth day. In some cases there was very little swelling between the vesicles, in others—especially in the confluent cases—maturation was pronounced. In all, the vesicles were more profuse on the face, hands and forearms—the most exposed parts—less profuse on the body and legs. In several cases the soles of the feet were so profusely covered and on account of the thickened skin, so painful, that the patients were unable to have their feet touch any object for several weeks. In one of the cases the mouth and pharynx were so completely covered that it was impossible to place a pin's head between the vesicles. In this case the larynx also was affected with an apparently pseudomembranous formation. There was no voice above a whisper for more than five weeks, then, as gradually the membrane loosened and was expelled, sounds were uttered. In one case—that of a pregnant woman—the groins and the labia majora were thickly covered with vesicles and pustules, the labia minora and vaginal walls with ulcerating points very much like those we find on the mucous membrane of the mouth and pharynx, where the vesicles, instead of going on to pustule formation, usually break and leave an ulcerating surface. I have seen very few vesicles on the scalp—in two cases only.

With the advent of pustulation the secondary fever appears. In some of the cases there was absolutely no secondary fever, even in one profusely covered with vesicles. In other cases the secondary rise of temperature was slight, reaching only one hundred or one hundred and one degrees Fahrenheit, and lasting only twenty-four to thirty-six hours. In the hemorrhagic pustular case, the secondary fever ranged high until on the ninth day, when death occurred. In the confluent case it lasted for weeks, but this case was complicated by septic pneumonia which accounted for the long continuation of the fever.

In several cases of variola discreta the pustules began to dry up on the ninth or tenth day and quickly scaled off. In every case the drying-up process began on the face, but was completed first on the body, then on the hands, then on the face, and last of all on the soles of the feet, requiring in all from two to six weeks. On the face, after the scab had fallen off, there remained a papular elevation which gradually and very slowly shriveled up and disappeared beneath the skin.

In only one case of varioloid was secondary fever present, and this was in the patient with confluent patches on the back. It lasted about four days. In those cases styled as abortive varioloid, umbilication was very indistinct or even absent, and there was no pus formation. The vesicle shriveled up within twenty-four hours after forming and dessication was complete in from five to thirteen days. In other cases of varioloid there was distinct umbilication, pus formation and crustation. In the patient with confluent patches, dessication was not completed until the middle of the sixth week.

The following shows the great variation in the length of time the disease lasted.

One patient with variola confluens was sick for forty-seven days.
One patient with variola discreta was sick for thirty-nine days.
One patient with variola discreta was sick for thirty-two days.
One patient with variola discreta was sick for twenty-five days.
Two patients with variola discreta were sick for twenty-four days.
Two patients with variola discreta were sick for twenty-three days.
One patient with variola discreta was sick for twenty-two days.
One patient with variola discreta was sick for twenty-one days.
One patient with variola discreta was sick for twenty days.
One patient with variola discreta was sick for eighteen days.
One patient with varioloid with confluent patches was sick for forty days.
One patient with varioloid was sick for twenty days.
One patient with varioloid was sick for eighteen days.
One patient with varioloid was sick for sixteen days.
One patient with varioloid was sick for thirteen days.
Two patients with varioloid were sick for twelve days.
One patient with varioloid was sick for seven days.
Three patients with varioloid were sick for six days.
Two patients with varioloid were sick for five days.

Not counting the patient with variola pustulosa hemorrhagica, who died on the ninth and the one with varioloid with puerperal septicemia who died on the thirteenth day, we have an average for twelve cases of variola, of twenty-six days, and an average of thirteen cases of varioloid, of thirteen days.

Of the twenty-five patients living all but the very mild cases of varioloid show the marks of smallpox. It is now eight months since the first, and three months since the last case occurred and not only the pit but also the typical brown spots are distinctly visible in almost all of the patients. I have noticed that prolonged exposure to strong sunlight causes these spots to become more distinctly visible, while darkness has the opposite effect. The amount and intensity of the pitting is proportionate to the amount and severity of pustulation.

Of the four pregnant women sick with the disease, all have given birth to their offspring. The woman sick with variola confluens was six months pregnant at the time of her disease. Her child was born at full term and shows not a mark of any kind. One of the women sick with variola discreta was six months pregnant at the time of her sickness. Her child was born at full term and does not show a mark. One of the women sick with variola discreta was seven months pregnant at the time of her sickness. Her child was born at full term and has eight or nine deep pits on the face, arms, shoulders and legs.

The woman sick with varioloid and pregnant about eight and one half months aborted at that time owing to the prolonged and high initial fever. The child, though it is feeble, has now lived five months, showing no mark or blemish of any kind. Though this child was born during the papular stage of the woman's disease and was repeatedly exposed to her during the vesicular and pustular stages, it did not contract the disease. I attribute its immunity not to the fact that the mother had varioloid, for the child was disconnected from the mother's circulation before her attack of the disease could have become protective to it, but I think very probably the child became protected by the mother's vaccination. She was vaccinated on the seventh day, and again on the thirteenth day after exposure. Both vaccinations became effective, the first on the sixteenth day and the second on the twenty-first day after exposure. On the nineteenth day after exposure she took sick and on the twenty-first day aborted.

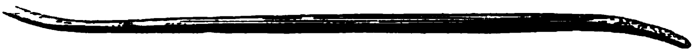
[TO BE CONTINUED.]

A PERIOSTEAL ELEVATOR.

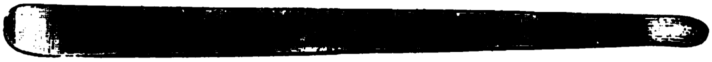
By EMIL AMBERG, M. D., DETROIT, MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THIS simple periosteal elevator, which I exhibited before the Detroit Medical Society, May 1, 1901, has proved serviceable to me in mastoid operations and may perhaps find a wider field for application. The instrument, which is made of spring steel, is about five and three-fourths



inches long, three-sixteenths of an inch wide on one end, and six-sixteenths of an inch wide at the other. It is sixty-four thousandths of an inch thick in the middle, and thirty-two thousandths of an inch thick at



its ends. The ends are semicircular and the edges well defined. The advantages of the instrument consist in its simplicity, and in the circumstance that we have at our disposal two different widths in one instrument, and that it is very easily handled.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, FEBRUARY 6, 1901.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.

REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR ALBERT E. CARRIER read a paper entitled "The Doctor in Public Life." (See page 193).

DOCTOR McGRAW: There are many questions to be considered regarding doctors entering politics. In the first place it is absolutely impossible for a man to be elected to office unless he devotes himself to procuring office, and I do not know how any busy and ambitious man in the profession can devote the time necessary to securing political offices. It seems to me that it would be impracticable for physicians who are active in their professional work. Every man can do a certain amount of political work as regards influencing other men, but office holding is practically impossible for a physician who is busy in his profession. There can be no question about it that if we could elect to all of these offices physicians who are honorable and learned and well posted in the particular branch which is needed, it would be a great public benefit, but it appears to me just at present that this is not at all practicable.

DOCTOR DOUGLAS: I must say that I think the remarks of DOCTOR McGRAW in regard to the impossibility of the physician becoming a politician are so appropriate that it is unnecessary to add to them. It seems to me that a thoroughly conscientious physician carrying the responsibilities of the ailments and sicknesses of a large number of families on his shoulders, and holding himself accountable for their proper care, is so entirely inconsistent with mixing with ward heelers and caucuses as to be an absurdity. There no doubt is an influence which could be exercised by medical men on the respectable and thinking portion of the community, that would produce a great deal of the good to which the paper referred without the physician actually sacrificing his medical standing amongst his fellow physicians or his patients. I have no doubt that if the profession would educate the people through societies and journalism, this influence would result in a realization of the duty that rests upon their shoulders.

DOCTOR SAMPSON (Windsor): I am opposed to medical men, as a rule, taking part in public life. I think the same as DOCTOR McGRAW. There are medical men who should be in politics; some should be in public life and in the profession while others should be in public life and out of the profession entirely; but for medical men to discuss the question as to whether they are called upon to take an active part in public affairs, I believe is a mistake. The man who does not appreciate the difference between his and every other profession should never have been in the profession. The relation in which we stand to the community is different from that of any other class of people. I do not believe that the honest, industrious and ambitious medical man can afford to have his work tampered with, even in the interest of public health. We all know very well that our social duties have sometimes cost a human life either by us not being at our post, or by hastening away too rapidly from some patient to go to a public meeting or a social gathering. The profession cannot afford in a general way to take any active part in the affairs of public health. There are some difficulties in this country that are not met with in Canada. The mode by which your legislators are elected is a more unfortunate one than in our country. There it is customary for a man who enters politics to remain in public life. We do not have the difficulty to which DOCTOR MCGRAW alluded tonight, that of seeking office. The period of an election contest is a very short one and no one knows that he is to be a candidate until a few days before election. The coroner's office is a very important one and should be filled in the most dignified way, by one of the ablest medical men in the city of Detroit. No man can be too learned or too honorable to be appointed to that position. In our country the coroner is appointed for life. School inspectors, in our country, are elected by county councils. They must be men qualified for the position before they can secure it; they must have university standing, et cetera. A lucrative salary accompanies the position, which is retained during life. The head of the board of health is also, I believe, appointed for life, thus deriving the benefit of the experience which he acquires. Reference was made tonight to the administration of justice. I think that this is one of the things in which the profession should exercise a stronger voice than they have. The government should appoint all the expert witnesses on criminal cases. I believe that every man who practices his profession as he ought becomes more and more interested in it the longer he lives; attaches a great deal more value to human life; and, as he grows older, feels that he cannot do a single thing that would call his attention to anything outside; but, once let him enter into public life and I venture the opinion tonight that to a great extent his usefulness as a saver of human life would be impaired. I believe there is no profession in which the natural training of the mind of a man who wills to think seriously and soundly enters as deeply into his work as the medical profession.

DOCTOR PARKER: It seems to me that in the matter of hygiene, particularly, as it refers to the public schools, the physician hears more of the complaints of the people and knows the demands of the schools better than anyone else. I myself was once on a school board, in a small place, when a school house was being built, and it is surprising to find out how it is done. The important questions as to what shall be the size of the windows compared to the number of square feet of floor space, the proper distance for placing seats apart, et cetera, should be left to medical men, but decided as they are by men who are not physicians their solution cannot be relied upon. In that way the physician's duties can very clearly benefit mankind. I think the only class of offices to which medical men may aspire are the appointive offices. The politics of the United States are of such a character that no man who is carrying on professional work should ever attempt to engage in them.

DOCTOR SHERMAN: It seems to me that our form of government, being one in which people are supposed to rule, the essential thing is to form an opinion. The people must be educated to certain reforms before we can hope to gain their support politically. This is the way in which the physician can do a great deal of good. He comes in contact with every possible portion of the community, and if he does his duty to the public in speaking of public questions when he comes in contact with the people he will in that way aid in shaping public opinion upon important questions and be of great benefit to the community. I think entering public life itself as a physician, while it may be beneficial to the community, is not the best thing for the physician himself. It will take, as has been said, a good deal of his time and financially he will not be any better off for it. In looking about and having done a little in public ways myself, I have found that the public is densely ignorant on questions wherein the medical profession should give light. I shall refer to but one, that is the drink habit. Every medical man knows that the average citizen drinks more liquor than is good for him. If the physician, whenever he has an opportunity, would express an opinion and carry that opinion out by his own individual habits he could do a great deal of good work in lessening the amount of liquor that is consumed. I know that many people with whom I come in contact look upon drinking liquor as a necessity. I think that if the medical profession would carry out some ideas on that line in educating the public they conld do some good. Something might be done in a legislative way. I have thought of a little bill that would be of great benefit to the public. I suggested the idea of having a bill (which was introduced last fall) passed in the state of Michigan which would provide that every liquor container should be labeled, under the provision of the pure food law, as to its contents, giving the percentage of alcohol, water and solid matter which is contained in the flask. That would give the average individual who drinks the liquor an idea of what he is drinking. A great many people think that when they spend five cents for beer they are getting just as much nourishment as they would if they bought a loaf of bread. I feel that on questions of sanitation and public health in general a great deal can be done. There is a bill in the legislature now which will provide for compensating people who are isolated. If a law were passed whereby persons isolated for contagious diseases in their family would not only receive a physician to treat their cases but would be recompensed for their loss of time, they would willingly be isolated until the quarantine could be raised and the danger of carrying the disease to other people would be done away with. I look upon this isolation of families for the prevention of the spread of infectious diseases as a public benefit, and therefore, the public should recompense them.

Doctor Carstens: Suppose a young man is starting out in practice and he has nothing to do; he is trying to become acquainted, to be introduced into the community. What better can he do to get acquainted than to go around among the people; and how can he get around among the people better than by taking an interest in politics, offices and conventions? Let him go out and make public speeches. The people hear him and become familiar with his name, and if they want a physician they are liable to employ him. It is, of course, assumed that he makes the right kind of an impression. If he does not do that he may hide his light "under a bushel" and starve to death. I think he is doing the right thing in getting appointed to a position and getting a start in life. In that way he benefits the profession by educating the community. Is a man who is simply a medical man and nothing else, the best kind of a man? His profession, I admit, takes up so much time, work requires so much of his brain, that he has little time for anything else; in fact, he can devote his entire attention to it and never master the whole subject. Is it a good thing for his brain to be employed in one groove continually without a change? I do not think it is. I think it is better for a man if he once in a while rests the professional part of his brain and exercises the other parts. I cannot see any reason why a medical man should not take an interest in politics.

Doctor Amberg: The doctor can use his political influence even though he is not a politician. The public knows that the word of a physician is more relied upon if he is not a politician. Doctor Carstens touched an interesting point; politics out of the profession and politics in the profession. Politics in the profession is a very serious question, and I am sure that he did not follow in his mind the importance of this statement. The doctor said that the young man who has no practice would do well to go into politics. I think that is the worst thing a young man can do. If he does not get practice it is the fault of the medical profession. We have now about one hundred and sixty medical schools in the United States, that are sending out graduates all over the country. In the future, it will be difficult for any young man to earn a living whether he goes into politics or whether he does not. He should not be confronted with this calamity nowadays. The medical schools are to blame. The young doctor can go to the hospital in his spare time and learn more. Everyone knows that in a course of four years' study a man cannot acquire all the knowledge of medicine. It would be well if in some way or another there would be established an insurance for the support of young doctors, just as there is a life insurance for the patients. There are several well-known examples of medical politicians. In the first place there is Gratio. I think as soon as he entered politics he ceased to advance in science. Another man is Gallinger who is a United States Senator and the promoter of a vivisection bill. The medical profession should hold a similar position to that which the United States Supreme Court occupies in the United States. I think that the physicican, who has such an insight into the workings of human nature, should occupy an exalted place in human life.

Doctor Carrier: I did not state in my paper that every physician should go into politics. I made the statement that the men who have acquired a competence, should take the position. I do not think that young men can enter politics without it doing them some harm. I know we have had examples of that in our own city. There are men in the medical profession in the state of Michigan who have retired. These men have acquired a competence maybe in the practice of medicine. They owe something to the state, to the city and county in which they live. All this talk about influencing men from the outside seems to me of no avail. One man in the legislature will do more in influencing votes for a measure before that legislative body than a dozen or twenty on the outside. There is a bond of fellowship, of fraternity, between the members. How many doctors are there in this room tonight who have attended one caucus in this city for the nomination of officers? We will never procure that respect for the profession which is our due until we take more interest in outside affairs. The mention of that name, Gallinger, is no evidence of what a medical man can do. There are bad men in all positions, and he may be one of them. I asked for good men, men who have the respect of the profession at large. If we had a half dozen men in Congress and one or two in the Senate, who would legislate for laws in which the medical profession is interested, see what great benefit would be derived. I should not like to feel, as Doctor Sampson does, that I had ever gone somewhere and my patient died because I went. I could not endure that; I think I should quit. The doctor cannot always be with his patient; he must go elsewhere.. He goes to a medical society, or to the State Society to be gone two or three days. What will the patients do then? I think that it is important that a medical inspector of schools be created particularly for the purpose of weeding out the children who have the beginnings of a disease which may end disastrously, but which, if detected early, may be overcome.

STATED MEETING, FEBRUARY 27, 1901.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR MOSES A. FECHHEIMER read a paper entitled "Historical Sketch, Etiology and Pathology of Diabetes Mellitus," and DOCTOR JAMES E. DAVIS read one on the "Course and Treatment of Diabetes Mellitus." (See pages 205 and 210).

DOCTOR JOHN E. CLARK: There is an increase in cases of diabetes. It is becoming more and more a disease requiring consideration by physicians. In recent years scientific men have devoted a great deal of time to a clear and concise investigation of the matter. We are beginning to learn that there is something more to diabetes than the simple fact that it is a disease in which sugar is present in the urine. We have present, as referred to by DOCTOR DAVIS, diacetic acid. Diacetic polyuria is a condition in which diacetic acid is present in the urine, and the relation that the presence of this acid bears to the gravity of diabetes is getting to be more and more appreciated. Before death it has been found by some investigators, among whom HIRSCHFIELD is very prominent, that diacetic acid is present in a considerably larger amount than is ordinarily found. It is believed that in almost every case of glycosuria there is present more or less of this acid owing to lack of oxidation. Diacetic acid in the system breaks up into acetone and alcohol and carbonic hydrate. Now the detection of this preliminary stage, before diabetic coma occurs, is not difficult, because the chemical test is one that is easily applied. Acetone in the urine and diacetic acid can be detected by the use of a solution of ferric chlorid. There are other things, however, that may give the same reaction, and among those are some of the medicines that DOCTOR DAVIS prescribed for one of his cases. On agitating the urine with ether, the ether will resolve the diacetic acid, and then by applying the ferric chlorid test, the reddish color is produced. This is an important point in prognosis. As a rule the special danger in cases of diabetes can readily be detected, but not always. Sometimes the shrewdest clinician will be disappointed in a prognosis, but he need not be if he will take care to apply some of the more modern tests for the urine. I have in mind a case of constant diabetes, so far as the presence of sugar was concerned. There had been no condition for five years in which sugar was not present in the urine although at times the percentage was very low. It had run as high as eight per cent. and down to a fraction of one per cent. This fluctuation I attributed to the medicine used. In a paper published recently the statement was made that the dose of chloretone given should be five to thirty grains. This I consider correct. My experience confirms me in the belief that caution should be used in administering this amount of chloretone at a dose, especially in cases of diabetes and in which acetonuria is present. In regard to the statement made by the essayist that oxybutyric acid precedes diabetic coma, I would say that there are other grave conditions of the urine in diabetes. One is called lipuria. This condition may be recognized through the microscope. The other condition is lipaciduria which is much more serious and indicates decomposition.

Doctor Flintermann: I have in mind a case that might interest the society. I saw a lady forty-five years of age, about five weeks ago, who complained of pain through the left side. I did not succeed in making a diagnosis of intercostal neuralgia. I asked for a specimen of her urine. The examination resulted negatively. I visited her several times and made repeated examinations of the urine, but failed to find sugar. The only thing the patient complained of was that she passed acid urine, had lost flesh, and sometimes felt tired. Close examination revealed the fact that upon auscultation and percussion there was a dry, pleuritic crepitation which after a few days extended over the area of the left lobe of the liver, and in the course of time reached over the whole peritoneal covering of the liver. Then it became noticeable that the left lobe was getting larger and harder. The patient had a good appetite, no nausea and no fever. About two weeks ago upon again examining the urine, I found a heavy specific gravity, sugar and uric acid. I made a diagnosis of sclerosis of the liver. Another physician was called in who saw the patient twice. He saw her again later, and said that the case had progressed. There is a possibility that the pancreas might be involved. There is total absence of jaundice, and in no way any stagnation of the system. I have seen many cases of carcinoma of the pancreas in which I very carefully examined the urine during the course of the disease and never found any trace of sugar, so I am at a loss to account for its presence in this case. I put the lady on proper diet, but it seems that there is no effect whatever, and I am afraid to continue the antidiabetic diet. I have seen several cases of neuralgia wherein I found the presence of sugar in the urine. Thirst and loss of strength and increase of appetite are not always symptoms in diabetic patients. When applicants for insurance come from the highest walks of life the frequency of this disease is remarkable. Regarding the treatment of diabetic coma I have never seen any benefit from any treatment. I should like to know whether there is a physician present tonight with experience in treating this disease who has ever seen a patient recover from coma. Often I have seen cases of angina pectoris wherein I made examination of the urine and found sugar. Such cases usually run a fatal course in a short time. There is one thing in particular from which I have learned a lesson, namely, in a great many cases I do not insist upon a, so-called, strict antidiabetic diet. I have seen one case in which I am sure coma was hastened by the simple measure of a too strict antidiabetic diet. As soon as a symptom of coma makes its appearance we should immediately discontinue antidiabetic treatment.

Doctor Goux: It occasionally happens that these cases make their way to the office of the eye specialist, and once in a while it falls to his lot to make the diagnosis. I think the complications from which these patients most commonly suffer are the different forms of iritis and retinitis. Retinitis, of course, is quite characteristic, and when we see the retinal hemorrhages in the region of the macula and the presence of the white exudate, an examination of the urine is always made. It frequently happens, however, that involvement of the retina is not found in the macula or in that immediate region. It frequently is farther forward or so far forward that it escapes notice, and is possibly not discovered at all. These cases, of course, are usually demonstrated postmortem. All forms of iritis are common with diabetes, the plastic form frequently following operation upon the iris; but sometimes iritis may develop without any exciting cause.

DOCTOR CARRIER: I think that the difficulty in the treatment of many of these cases lies in the fact that they are not discovered early enough. Many of the symptoms are misleading. If it were a routine practice with us all to examine the urine of every patient that we are attending we might find indications of diabetes. A number of manifestations occur upon the skin that it is well to remember. One, especially, is a dryness of the skin and a pruritus. There are two diseases for which we look if we have prolonged pruritus. One is diabetes, and the other—a very rare disease—mycosis fungoides. The condition that occurs afterwards is due to the presence of sugar, causing pruritus not only, but the discharge of the sweat over the surface.

DOCTOR AMBERG: The symptoms might be referred to the meatus and an examination of the urine is advised in such cases. The results of the mastoid operation in a diabetic patient are usually serious.

DETROIT ACADEMY OF MEDICINE.

STATED MEETING, JANUARY 8, 1901.

THE PRESIDENT, ARTHUR D. HOLMES, M. D., IN THE CHAIR.
REPORTED BY HARRISON D. JENKS, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR ALVAH N. COLLINS read a paper on "Appendicitis with Report of a Case Complicating Ovarian Degeneration." (See page 201).

DOCTOR WYMAN: The paper meets my views fully, and I am pleased with the historical review. It is impossible always to separate the benign from the malignant cases. The disposition of some operators is to assume that every case will become serious, yet many have severe cases that recover with medical treatment. A good deal of credit for work along this line should be given to American surgery. Reference was made to ROKTANSKY. I believe he reports that in twenty thousand autopsies there was no abscess of the appendix, but he often found foreign bodies present. Yet FORMAD in the early eighties found many abscesses. Men usually find that for which they are looking.

DOCTOR E. W. JENKS: I hoped the paper would bring out the great difficulty frequently met with of distinguishing ovarian disease from appendicitis. In the removal of ovarian tumors we often find a degenerate appendix also.

DOCTOR FLINTERMANN: I cannot refrain from saying that many cases of appendicitis require operation. Yet it would have been unnecessary in many others had they been properly treated. The patients needed complete rest with no laxatives or enemata; but opium and absolute liquid diet without milk should have been given and an ice poultice applied over the appendix. Too many physicians insist upon administering laxatives. Most cases of appendicitis in women begin at the menstrual period and a diagnosis is not always easy to make. Surgical treatment is a safe one and perhaps to be preferred to the medical.

DOCTOR WILLIAMSON: This is a branch of medicine that needs more investigation. I believe in early operation for there is no harm in an early exploratory operation. Let me mention two cases. In one there was a rapid pulse and a temperature of 100°. On operation the appendix was found to be simply injected. The patient would undoubtedly have recovered without an operation. In the other the temperature was normal, but the appendix was discovered to be adherent to the omentum, and about a drachm of pus was removed.

DOCTOR ROBBINS: I have several thoughts to offer. MCBURNEY says not to operate on any person as soon as the diagnosis is made, but to watch, seeing the patient every four hours. If the symptoms subside he waits, but if they grow worse he operates at once. He would operate in the interval if possible. If we are sure of appendicitis we should operate during the first twenty-four hours. There is difficulty in making a diagnosis in cases like this. The surgeon operating for tubal disease should not fail to examine the appendix.

DOCTOR TIBBALS: I have some doubt as to the case mentioned in the paper. But as to the diagnosis of appendicitis, we never have any adequate idea of the conditions in the abdomen until it is opened.

DOCTOR COLLINS: The average woman has nervous irritation from the ovary instead of from the appendix and we must rid ourselves of the idea of medical treatment. By putting the patient to bed, giving opium and producing constipation, we raise the temperature.

EDITORIAL ARTICLES.

THE BATTLE CREEK MEETING.

THE thirty-sixth annual meeting of the Michigan State Medical Society was held at Battle Creek, May 15 and 16, 1901. It was very satisfactory. It was easily reached by both steam and electric cars. More than two hundred voting members—an unusually large number—found it convenient to attend. Hotel accommodations were ample. The weather was fine. The advertised participants in the printed program, with one or two exceptions, kept their appointments. All three sections were well attended and, save the section on General Medicine during the Wednesday afternoon session, had excellent quarters. The trade exhibit was larger than usual and conveniently located in the basement of the church used for the general session. The Battle Creek Sanitarium and the Phelps Sanatorium entered cordially into the spirit of the occasion, as a result of which nearly three hundred people carried away with them most favorable impressions of the magnitude and the munificent advantages of those institutions. Battle Creek made an impression as a thriving inland city. The beautiful surrounding country and Gull Lake also lent their own peculiar attractions.

All the arrangements for the meeting showed the interest of the officers and executive committee headed by Chairman HAUGHEY, all of whose painstaking efforts were thoroughly appreciated.

A new feature of this meeting was a Pathologic Exhibit arranged by a special committee. So well did the idea take that the same committee was continued for another year and one hundred dollars were appropriated to defray its expenses.

A wise provision was made for the reinstatement of delinquent members. According to the by-laws such persons may be reinstated to membership by following the prescribed course for admission and the further payment to the treasury of a sum equal to one year's dues.

LEARTUS CONNOR, A. M., M. D.

LEARTUS CONNOR, the newly-elected and thirty-sixth president of the Michigan State Medical Society, was born in New York State, January 29, 1843. He is of Irish and English descent from ancestors of colonial times, some of whom were patriots in the Revolution and in the war of 1812. One maternal ancestor settled in Massachusetts as early as 1633.

DOCTOR CONNOR's academic education was acquired at Middletown, New York. He took his baccalaureate from Williams College in 1865 and received a master's degree from the same institution in 1868. After a short term in pedagogy he began the study of medicine in the University of Michigan, but graduated from the College of Physicians and Surgeons in New York City in 1870. He located temporarily in Searsville, New York, but afterward removed to Detroit, where, since 1878, he has enjoyed an exclusive and lucrative ophthalmo-otologic practice.

DOCTOR CONNOR's career has been busy and eminently public. His name has been professionally connected with the Detroit Medical College, with Saint Mary's, Harper, the Children's and the Woman's Hospitals in Detroit, and for nearly a quarter of a century he edited a medical journal known successively as the *Detroit Review of Medicine and Pharmacy*, the *Detroit Medical Journal*, the *Detroit Lancet*, and the *American Lancet*. His official connections have been numerous. They include secretaryships of the Detroit Medical College and of the American Medical College Association, presidencies of the Detroit Academy of Medicine, of the American Academy of Medicine, of the American Medical Editors' Association, and a vicepresidency and chairmanship in the American Medical Association. His membership has extended also to the PanAmerican Medical Congress and to several scientific organizations, and he has identified himself actively with the social, political, religious and business interests of Detroit and Michigan.

Aside from his editorial work his contributions to medical literature have been numerous and important. They relate chiefly to the subjects of his special practice, although several show the scope of his broad philosophic mind.

Personally Doctor Connor is a sterling, strong, conscientious, positive character. Possessed by birth of the best qualities and fine capabilities he has nurtured them in a most active and almost Puritanic manner until today he stands among his fellows a model gentleman and an honor to our State Medical Society.

ANNOTATIONS.

THE RECENT SPREAD OF SMALLPOX.

Elsewhere in this number will be found a very readable analysis of a localized epidemic of smallpox such as has surprised the whole country during the past two years. Fortunately the cases were generally mild, but the characteristics of the disease were so unmistakably apparent that the authorities had no excuse for not using rigid precautionary measures. The spread of smallpox in Michigan may be appreciated from a recent report of the State Board of Health to the effect that outbreaks of it have been caused to cease in one hundred and sixty-two localities since the first of January. It is still present in seventy-six places in this state.

PROFESSIONAL SECRECY AND THE LAW.

The recent occurrences in two Detroit hospitals of two deaths following suspected criminal malpractice, and the markedly differing attitudes of the two institutions toward the law have again brought into prominence publicly the old subject of professional secrecy. In one case the defendants were themselves members of the medical staff of the hospital and the authorities of that hospital voluntarily offered no information. In the other and later instance representatives of the medical staff brought certain facts to the notice of the police authorities, who made such detention as they saw fit. From the standpoint of the hospitals themselves the cases were different but in the eyes of the law they were practically the same. It is not the intention of this journal to discriminate between the two institutions. We shall, however, call to mind an important point which the public mind is apt to forget. Although the prevention, detection and punishment of crime should deeply concern every good citizen, and though the concealment of the fact of crime is regarded as being accessory after the fact, yet common sense alone teaches that under certain circumstances it is expedient to disregard, at least temporarily, the fact of a crime. Self-inflicted abortion and attempted suicide are criminal acts, and yet if the guilty parties were invariably punished they would seldom come under needful medical attention for fear of being reported.

A few years ago the London *Lancet* mentioned the employment of the police authorities as sanitary inspectors during a severe epidemic of scarlet fever in Whitechapel. Having the right of entry with the permission of the owners or tenants into lodging houses, thieves' kitchens and other such places, they obtained valuable information concerning the spreading disease, and although they constantly came across men who were "wanted," yet for the time being such men were allowed to go free. They considered such a course expedient for the attainment of their immediate and more important object. Similarly the primary function of a hospital and the professional work of a physician are to save life. Like a victim in a city of refuge a patient looks for succor and not for a moral judge or a detective. If a physician or a hospital be unable to dissociate these functions it may be presumed with certainty that those who shall have need of them will find such as are not portals to a criminal dock or agents in the service of the law.

A FURTHER REPORT ON ANESTHETICS.

PENDING the publication of the report of the Anesthetic Committee the following points are patent from the editorial comment in the *British Medical Journal:* Clinical evidence showed chloroform to be responsible for more than one case of danger in every two hundred administrations, ether for fewer than one in fifteen hundred, gas and ether for fewer than one in one thousand. Complications of anesthesia appeared to be more common in females, although dangerous complications under ether were more common in males than in females. The tendency to circulatory disturbances seemed to vary according to the relative amount of chloroform in the anesthetic employed. Respiratory complications occurred with nearly equal frequency under ether and chloroform but those under chloroform seemed graver and more persistent. The statement under the Hyderabad Commission that chloroform has no direct action on the heart was refuted clinically over and over again, and was disposed of in the following conclusion: "When danger occurs in chloroform, whatever its exact nature may be, there is abundant evidence that in a large proportion of cases the symptoms that are observed are those of primary circulatory failure." The only dictum given as to methods of administration is that no mixture which contains chloroform should be administered by means of a closed inhaler. In general it was concluded that the occurrence of danger during anesthesia depends largely upon the administrator and that by far the most important factor in the safe administration of anesthetics is the experience he has acquired.

MEDICAL NEWS.

STATE SOCIETY OFFICERS.

THE following officers of the Michigan State Medical Society were elected at the recent annual meeting: President, Doctor Leartus Connor, of Detroit; first vice-president, Doctor Beverly Drake Harison, of Sault Sainte Marie; second vice-president, Doctor Charles Douglas, of Detroit;

third vicepresident, Doctor Walter H. Sawyer, of Hillsdale; fourth vicepresident, Doctor Lincoln P. Parkhurst, of Middleville. Section on General Medicine: Chairman, Augustus W. Crane, of Kalamazoo; secretary, Willis S. Anderson, of Detroit; orator, William K. West, of Calumet. Section on Surgery and Ophthalmology: Chairman, George C. Hafford, of Albion; secretary, William A. Spitzley, of Ann Arbor; orator, Angus McLean, of Detroit. Section on Gynecology and Obstetrics: Chairman, John J. Mulheron, of Detroit; secretary, Casper K. Lahuis, of Kalamazoo; orator, William H. Haughey, of Battle Creek. The next meeting will be held at Port Huron.

AWARDED A MEDAL OF HONOR.

Doctor George E. Ranney, Lansing, Michigan, has been awarded a medal of honor by President McKinley for distinguished gallantry in the civil war. "On this occasion," according to the war department record of the action at Resaca, Georgia, May 14, 1864, "Assistant Surgeon Ranney, at great personal risk, went to the aid of a wounded soldier lying under heavy fire between the Union and Confederate lines, and with the aid of an orderly, carried him to a place of safety." On another battlefield the doctor was promoted to a brigade surgeoncy for bravery.

MEDICAL COMMENCEMENT EXERCISES.

DETROIT COLLEGE OF MEDICINE.

The thirty-third annual commencement exercises of this institution were held at the Light Guard Armory, Thursday evening, May 9, when a class of forty-five received the degree of Doctor of Medicine. Twenty-five of the graduates resided in Michigan and the remaining twenty were residents of other states and countries. Addresses were delivered by Doctor William M. Donald and Judge Alfred J. Murphy, and the degrees were conferred by Honorable Sidney D. Miller. Following are the names of the recipients: William F. Acker, Robert H. Baird, Herbert M. Best, Parker S. Bishop, Emory J. Brady, George W. Brooks, Byron E. Burnell, Eugene G. Charbonneau, Julius C. Clippert, Frank B. Collins, Roswell W. Comstock, Archibald S. Coutts, Marcellus E. Coy, James W. Cunningham, Francis J. Durocher, James A. Elliott, James E. Elliott, Gilbert E. Frank, George A. Gordon, Frederick J. Hackney, William R. Hanes, Charles D. Huber, Albert G. Huegli, J. William H. Jordan, Louis C. Kent, Charles H. Lozar, Archibald R. McCracken, Allan W. McDonald, Archibald E. McGregor, Theodore R. MacClure, Frank H. Morehouse, Henry A. Moyer, George V. Oill, Albert E. Patterson, James B. Rice, Paul F. Rice, Julius J. Siffer, Francis J. Smith, Frank T. F. Stephenson, Robert T. Tapert, James B. Wallace, Franklin S. Waterworth, Charles Wetherbee, William H. White, Arthur J. Wilkinson. . . . At the conclusion of the exercises, the faculty of the college, the newly created doctors, and the many invited guests repaired to Hotel Cadillac and participated in the festivities of the annual banquet. Postprandial speeches were delivered by Reverend Edward H. Pence, Judge Alfred J. Murphy and Doctor Albert E. Carrier. . . . The Alumni Association convened in annual session at the Russell House in the afternoon of the above date, and listened to an address by the retiring president, Doctor Don. M. Campbell. After pursuing the order of business, the following officers were elected for the current year: President, Doctor James E. Davis, of Detroit; vice-president, Doctor T. B. Scott, of Vernon, Michigan; financial secretary and treasurer, Doctor G. C. Bassett, of Detroit; historian, Doctor C. T. Southworth, of Monroe, Michigan; executive committee, Doctors Don. M. Campbell and H. H. Cook, of Detroit, members for three years.

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THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

THE thirteenth annual commencement exercises of this college were held at the Detroit Opera House, Thursday afternoon, April 25. The following list comprises the names of students whose entrée to the medical profession dates from that occasion: Henry L. Burdeno, James E. Curlett, Peter C. Dodenhoff, Romeo H. Earle, Thomas A. Ewart, Mrs. Annette B. Fiske, Herbert J. Higgs, John W. Hoffman, Burton E. Kellogg; Charles F. Kuhn, Christopher G. Lehman, Frank E. Luton, Esli T. Morden, Robert B. Mark, Irving W. Norris, John F. Osbaldeston, Morgan Parker, Dayton L. Parker, Henry H. Patton, Roy Pope, Miss Pisa Ricci, Frank H. Smith, Fred J. Sober, William A. Spencer, John J. Weitzman. . . . The annual banquet tendered to the graduating class was held at the Wayne Hotel in the evening.

THE DETROIT MEDICAL SOCIETY.

THE annual meeting for the election of officers of the Detroit Medical Society was held on Wednesday evening, April 24. The election resulted as follows: President, Delos L. Parker; vicepresident, Frank L. Newman; secretary, Louis J. Goux; treasurer, Wadsworth Warren. The new officers will assume their duties beginning with the last meeting in May, at which time the new committees will be appointed. After the May meeting the society will adjourn to the first Monday in September.

RECENT PUBLICATIONS.

REVIEWS.

THE TREATMENT OF FRACTURES.*

THIS work has speedily won a well-deserved popularity. Combining as it does the teaching of experience with Röntgen ray studies it is at once practical, up-to-date and the author has made it of great value. The exchange of "closed" and "open" for the old terms "simple" and "compound" is a mark of sensible authorship. The many illustrations are well selected and finely executed.

*By Chas. L. Scudder, M. D., Assistant in Clinical and Operative Surgery in Harvard Medical School. Second edition, revised and enlarged. Octavo, 433 pages, with nearly 600 original illustrations. Polished buckram, $4.50 net. Philadelphia and London: W. B. Saunders & Company, 1901.

MATERIA MEDICA AND PHARMACOLOGY.*

THIS is a manual of more than ordinary value. It is of convenient size and yet comprises a fund of knowledge both as a reference work for pharmacists and physicians and as a text-book for students.

*By David M. R. Culbreth, M. D., Professor of Botany, Materia Medica and Pharmacognosy in the Maryland College of Pharmacy, Baltmore. New (second) edition. In one octavo volume of 881 pages, with 464 illustrations. Cloth, $4.50, net. Lea Brothers & Company, Publishers, Philadelphia and New York.

TUBERCULOSIS AS A DISEASE OF THE MASSES AND HOW TO COMBAT IT.*

IT is needless to dilate upon the excellence of this monograph for the general reader. It is popularly written and, out of eighty-one essays upon the subject given, this one was awarded the prize by the "International Congress to Combat Tuberculosis as a Disease of the Masses." The work is certainly a masterpiece of its kind.

*By S. A. Knopf M. D., New York. Price: paper, 25 cents per single copy; cloth, 50 cents. Special price in quantities. Published by M. Girestock, 200 West Ninety-sixth street, New York, 1901.

BACTERIOLOGY IN MEDICINE AND SURGERY.*

THIS is essentially a manual for the use of students, health officers, and practitioners. In addition to describing bacteria and the methods of their cultivation and study, the author has treated such general subjects as the relation of bacteria to disease, immunity, infection, the relation or effect of light, heat, electricity, temperature, chemicals, et cetera to bacteria, disinfection, sterilization, the examination of water, et cetera.

*By William H. Park, M. D., Associate Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. In one 12mo volume of 688 pages, with 87 illustrations in black and colors, and two full page colored plates. Cloth, $3.00 net.

MODERN MEDICINE.*

THIS work is essentially modern. About one hundred and fifty pages are devoted especially to symptomatology, physical diagnosis, clinical bacteriology, and laboratory methods — the contribution of the present era. The various diseases are treated of in a pointed, comprehensive style, such as to make it of great value to students or for the perusal of practitioners. Type, illustrations and binding are all attractive.

*By Julius L. Salinger, M. D., Demonstrator of Clinical Medicine, Jefferson Medical College; Chief of the Medical Clinic, Jefferson Medcal College Hospital; Attending Physician to the Philadelphia Hospital: and Frederick J. Kalteyer, M. D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College; Hematologist to the Jefferson Medical College Hospital; Pathologist to the Lying-in Charity Hospital, Philadelphia; Assistant Pathologist to the Philadelphia Hospital. W. B. Saunders & Company: Philadelphia and London, 1900. Cloth, $4.00 net.

STUDENTS' MEDICAL DICTIONARY.*

This is a wonderfully compact and yet comprehensive and explicit medical dictionary. In illustration and tabulated form there is nothing more to be desired. Appendix A contains a full list of the mineral springs of the United States, their location, analyses and therapeutic actions. In this edition the author has also included a supplement, giving the clinical eponymic terms, symptoms and tests so often confusing in medical literature.

*By George M. Gould, A. M., M. D. Eleventh edition, enlarged. Price, $2.50. P. Blakiston's Son & Company, Philadelphia.

INTERNATIONAL CLINICS.—VOLUME II.*

As the name implies, this volume is composed of clinical lectures so presented as to be generally instructive and of great practical value to the general practitioner. Volume II, Tenth Series, contains thirty-four selected articles bearing upon live topics in therapeutics, medicine, neurology, surgery, obstetrics and gynecology, diseases of the eye and ear, and dermatology, and a report of the fifty-first annual meeting of the American Medical Association. Any physician, whether general practitioner or specialist; would find much to interest him.

*By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, U. S. A., Director of the Ayer Clinical Laboratory of the Pennsylvania Hospital, with the collaboration of John Ashhurst, Jr., M. D., LL. D., and Charles H. Reed, M. D., of Philadelphia, James T. Whitaker, M. D., LL. D., of Cincinnati, with regular correspondents in Montreal, London, Paris, Leipsic, and Vienna. J. B. Lippincott Company, Philadelphia.

INTERNATIONAL CLINICS.—VOLUME III.*

This volume contains thirty clinical lectures by such well-known men as F. C. Valentine, L. D. Bulkley, A. Fournier (of Paris), Bransford Lewis, W. S. Gottheil, J. M. DaCosta, J. F. Eskridge, Willy Meyer, A. Brissard (of Paris), L. Webster Fox, and several others of no mean reputation. There are no second-rate articles.

*Edited by Henry W. Cattell, A. M., M. D., with the collaboration of John B. Murphy, M. D., Alexander D. Blackader, M. D., H. C. Wood, M. D., G. M. Rotch, M. D., E. Landolt, M. D. (of Paris), Thomas G. Morton, M. D., and Charles H. Reed, M. D. J. B. Lippincott Company, Philadelphia.

SURGERY OF THE RESPIRATORY SYSTEM.*

The profession generally is pretty well informed regarding Doctor Crile's contributions in the nature of experimental research. Suffice it to state that they are most valuable and convincing. This volume is a convenient publication of his essay which was awarded the Nicholas Senn prize by the American Medical Association for 1898. No surgeon or physiologist can afford to overlook this work.

*By George W. Crile, A. M., M. D., Ph. D., Professor of clinical surgery, Medical Department Western Reserve University; Surgeon to Saint Alexis Hospital; Associate Surgeon to Lakeside Hospital, Cleveland. Second edition. J. B. Lippincott Company, Philadelphia.

OBSTETRIC CLINIC.*

THIS is a collection of thirty-nine clinical lectures on obstetrics. The author is a teacher having pronounced views on mooted topics, and in this volume he has presented them along with more generally accepted facts, in a most readable style.

*By Denslow Lewis. Ph. C., M. D., Professor of Gynecology in the Chicago Policlinic; Senior Gynecologist and Obstetrician to the Lakeside Hospital, Chicago, et cetera. E. H. Colgrove, 65 Randolph Street, Chicago.

EYE, EAR, NOSE AND THROAT.*

IN this one volume the essentials of four closely related subjects are brought together in a compass sure to be helpful to students and general practitioners. In each line the authorship is up-to-date. The consideration of postnasal adenoids would do credit to a much more pretentious work.

*By William L. Ballinger, M. D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, et cetera, and A. G. Whippen, M. D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. With 150 engravings and 6 full-page colored plates. Cloth, $2.00 net; flexible red leather, $2.50 net. Lea Brothers & Company, Publishers, Philadelphia and New York.

OBSTETRICS.*

THIS work is entitled a pocket text-book. It is much more than that. It conforms precisely to our idea of the needs of a beginning student of obstetrics. It teaches no fads or theories, but instead crystallized facts in such a way as to be easily gotten hold of. It covers the subject without loss of time or space.

*By David J. Evans, M. D., Lecturer on Obstetrics and Diseases of Infancy in McGill University Faculty of Medicine, Montreal. In one handsome 12mo volume of 409 pages, with 149 illustrations, partly in colors. Cloth, $1.75 net; full flexible leather, $2.25, net. Lea's Series of Pocket Text-Books. Edited by Bern B. Gallaudet, M. D. Lea Brothers & Company, Philadelphia and New York.

PHARMACOLOGY AND THERAPEUTICS.*

IT is but a few months' time since this journal called attention to the first edition of this work. We are wont to regard the purely didactic and unreasoning style as most popular and yet the second edition of this demonstrative work is already called for. It is a tribute to author and readers alike Its standpoint—the physiologic action of drugs—is the only basis with which the scientific physician should be satisfied.

*By Arthur R. Cushny, M. A., M. D. (Aberd.), Professor of Materia Medica and Therapeutics in the University of Michigan Medical Department, Ann Arbor. In one handsome octavo volume of 732 pages, with 47 engravings. Cloth, $3.75 net. Lea Brothers & Company, Philadelphia and New York, 1901.

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ORIGINAL CONTRIBUTIONS.

ADDRESSES.

THE CAREER OF MEDICINE: A GLORIOUS HERITAGE OF GOLDEN OPPORTUNITY.*

By FRANK T. LODGE. A. M., Detroit, Michigan.

PROFESSOR OF MEDICAL JURISPRUDENCE IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

At the annual commencement of a certain medical college, held a few years ago, not more than a hundred miles from the city of Detroit, a ladies' quartet had been secured to render the musical numbers with which the program of exercises was plentifully interspersed. Just after the diplomas had been distributed and the degree of Doctor of Medicine had been conferred upon a large number of well-qualified graduates of the school, the charming quartet of ladies, who had been performing their duties with skill and grace, and whose selections of musical numbers had apparently been very appropriate, stepped forward and sang "Massa's in de Cold, Cold Ground." Thereupon a scarcely repressed titter pervaded the audience, and the remark was frequently made that the selection of that pathetic negro song was the most appropriate part of the whole commencement.

Now, why did that audience smile when the mournful melody of death immediately followed the turning loose of two dozen newly-fledged physicians upon that community? What previous history led them to instantly and instinctively connect the death of the negro's master with the services of his physician? Why is the physician considered the legitimate object upon whom all kinds of cheap witticisms, by all manner of would-be wits, are freely and constantly lavished? Is it not because there have been dishonest and unworthy members of what ought to be the noblest calling on earth? These few unworthy men have tainted the entire profession with the unwholesome odor of their actions. Their incompetence and fraud have robbed families of their cherished loved ones, and the quivering hearts of those whom they have bereaved have thereby become embittered against the whole profession. This intense feeling has extended to the friends of the victims until popular distrust and disapproval have become widespread.

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*Address on behalf of the Faculty at the Thirteenth Annual Commencement of the Michigan College of Medicine and Surgery, at the Detroit Opera House, Thursday, April 25, 1901.

Nothing on this earth can be a nobler object than the tender, skillful physician as he goes about on his daily rounds bearing health, help and healing in his hands. It is not for him "The applause of listening Senates to command." It is not for him to fill the public eye with great achievements in political and governmental measures. It is not for him to find the public press teeming with garish accounts of his picturesque personality. Quietly, patiently, unobtrusively, he rides his daily rounds, going here into the hut of the humble, there into the mansion of the rich; but everywhere finding a common humanity suffering the same sorrows and writhing under the same pains, no matter how low or lofty their stations may be.

Of all men, the physician should be the least impressed by the distinctions of wealth and social station, for men are stripped of their daily apparel when he is called to their bedside; he deals only with the human body as God made it, without the artificial social distinctions which man has erected as barriers to separate him from his kind. To a helpful, hearty, whole-souled, Christian gentlemen, who realizes the great fact that men are men "for a' that," that every man is his brother, given him by God to help along this pilgrim way, what blessed privileges are conferred by the profession of the physician. He is called to treat the ills of the body, but how often does he remain to soothe the woes of the mind! How many secrets are poured into his ear, which those who tell them would cut off their right hands rather than repeat to any one else! How often do the doors of the closets which contain family skeletons start open when he enters the home! How freely do the burdened hearts come to him for comfort and counsel, because they know that the mantle of professional secrecy is wrapped about him, and because they trust and honor him, and confide in his wisdom and integrity!

Oh! my friends, surely life is more than meat, and the body than raiment! Surely it is not all of life to live--to eat, drink and be merry, to wear purple and fine linen, and to enjoy the comfort and ease which wealth may confer. The divine part within us assures us that we have a mind, a heart and a conscience, to obey whose behests is the sweetest part of living; and when we consider the finer things of life, and judge the occupations of men by these, none is so full of great possibilities as that of the physician.

Into this glorious heritage of golden opportunity, the faculty of the Michigan College of Medicine and Surgery most cordially welcome you, members of the graduating class. This is our first graduating class of the century. You are at the threshold of your careers. After four long, toilsome years, you are about to reap the reward of your labors and step from these walls into the struggles of active life. We cordially congratulate you upon having reached the goal of your ambition. We shall part from you with regret. We shall miss your faces in our class rooms. We hope that the years which we have spent together as teachers and pupils have knit our hearts together in the bonds of a firm friendship which shall last as long as these hearts shall pulsate, and that, wherever the pathways of your lives may lead you, your fond recollections will often turn back to the old College where you learned some of the mysteries of the human frame and its ailments, and became qualified to practice your chosen art.

Now that those labors have reached their end, the time has come for us to say farewell. The season of lectures is over; the relation of teacher and pupil has ceased, and we are face to face with another farewell. Farewell means retrospection. A farewell was never yet thoughtfully spoken which did not bring with it a flood of recollections of the past; neither has a farewell ever yet been thoughtfully given where those who spoke it did not look questioningly forward into the future. So, today, as the faculty of your Alma Mater say " Farewell," our hearts are tender with the many pleasant recollections of the past four years. We have forgotten the few unpleasant things which were inevitable in so close an association, but our remembrance of the pleasure which your presence with us has conferred is keen and tender, and we feel that it will never be effaced.

As you stand on the edge of the home nest, pausing for a moment before spreading your wings for flight, we have seriously pondered how best to speed you on your way. We have carefully considered what should be the last counsel the faculty is to give to the graduating class; but so much springs unbidden to the lips that it is hard indeed to say anything but " Farewell." For four long years, your teachers have been striving to instruct you how to become worthy of your profession. For four long years, they have helped to upbuild high ideals of your noble calling within the breast of every one of you. If the counsels of those four years are heeded by you, we can let you go without a fear. If they are disregarded, parting words of advice at this time would be vain.

We may venture, however, to remind you that, when your degrees are conferred and your diplomas are received, your hard work is not ended, but has only begun. In the daily practice of your profession, the necessity for constant study will be as great as it ever was in the class room. Yours is, indeed, a growing science. It began with the instinct of the savage which taught him that certain leaves and roots and berries would cure certain aches and pains in his dusky body. It has grown day by day, year by year, century by century, until, today, it deserves to be ranked almost with the exact sciences. This growth is due to the fact that, in every hamlet, in every hospital, by nearly every sick bed, all over the world, intelligent, enthusiastic and devoted physicians are observing the myriad manifestations of diseases, the actions of drugs, and new methods of manipulation and apparatus, and are communicating the results of their observations to the profession for the general benefit of humanity. For this reason, the task of keeping up with the wonderful progress which your profession is daily making is, of itself, an arduous one. Daily progress and growth upon your part are absolutely essential. Stagnation is surely fatal, and our first message to you is, " Let no day close without your performing some stint of reading and study, which will enable you to keep up with the progress of your profession." All we have been able to do within the college walls, has been to open the doors of the mysteries of this science, to conduct you through its corridors, and to give you slight glimpses at the countless riches which this wonderful treasure-house contains. Much study, much practice, much experience will be necessary before your art will rest upon you easily like a comfortable garment which has become fitted to the ridges and depressions of its wearer's frame. The great practitioners of today are those who, before each operation, read anew the minute details of its execution; who ponder and study each new case in family practice; who, before they go upon the stand as expert witnesses, so thoroughly prepare themselves that the cunning lawyer, who has been carefully coached by skillful physicians, cannot trip them upon any of the intricate details of the subject in hand.

Our next message is, "Always remember that yours is a learned and honorable profession, rather than a mechanical, money-seeking trade." Here, if nowhere else, does the highest success depend absolutely upon keeping high ideals untarnished by the stress and strain of this workaday world. There are physicians who carefully consider the pecuniary possibilities of each case they are called upon to treat, whose first inquiry is not as to the physical condition of the patient, but whether some responsible person will agree to pay for their services. These are the men who have brought the profession into reproach. Their ledger and cashbook have shut out the sight of their lofty ideals; and, for the dirty dollars, they have stooped to unworthy methods. We sincerely trust that such cannot be said of any of the members of this graduating class. We hope we have instilled into your hearts noble aims and lofty ideals, and that, in the years to come, you may walk in and out among your fellows, blessing, and being blessed by them as worthy priests of a worthy calling. If you do this, you will treat no patient in a mechanical way, looking simply to your fee.

The true physician approaches each case as if that were the only one in his practice, and the very act of his doing so carries with it great curative power. We all know what a strong factor in disease and its cure is what the layman calls the imagination and what the physician calls the psychic element. Mind does control matter. We are truly the creatures our minds make us; and, when we are ill, if the physician we have summoned brings to us an atmosphere of cordial sympathy, making us feel that the "man" of him is deeply interested in our particular case, we are already half way prepared for recovery. The physician who does this has not only laid the foundation of success in curing his patients, but he has also elevated himself by divesting his profession of the character of a trade and making of it a holy calling.

But, my friends, our time will not permit us to repeat anew the many words of caution and of counsel which you have so many times heard in the class room. We would, if we could, detain the swiftly fleeting moments which bring to us the moment of farewell. But time is inexorable, and we must part. We cannot let you go, however, without our benediction; without telling you that we are grateful for the zeal and industry which you have shown during your college course; without breathing for you that beautiful prayer which the terse Anglo-Saxon has condensed into the one word "Good Bye"—Good bye, dear friends and former pupils! Good bye, and may God be with you.

MEMOIRS.

HYSTERIA.*

BY GEORGE F. BUTLER, M. D., ALMA, MICHIGAN.
MEDICAL SUPERINTENDENT ALMA SANITARIUM, ALMA, MICHIGAN; PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, MEDICAL DEPARTMENT OF THE UNIVERSITY OF ILLINOIS.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE conception of hysteria which predominates in folklore today, and which to a certain extent dominated early medicine is that it is due to the spirit of the "mother" (or womb) which affects both sexes. The womb as late as SHAKESPEARE's time was still called the "mother."[1] KING LEAR says,

> "O how this mother swells up toward my heart,
> Hysterica passio; down, thou climbing sorrow,
> Thy elements below."

One folklore belief still entertained in many states is that unless the funis be cut and tied to the thigh of the child the placenta escaping into the womb causes the "spirit of the womb" to affect disastrously future offspring of both sexes.[2] The Greek conception of hysteria was that it was due to movements or spiritings of the uterus which as HIPPOCRATES[3] supposed was freely movable and under certain conditions rushed upward pushing the thoracic viscera into the throat and causing the sensation of choking. Hysteric symptoms affecting other parts of the body were likewise explained on the theory of the wandering of the uterus. According to PLATO: [4]"In men the organ of generation becoming rebellious and masterful like an animal disobedient to reason, and maddened with the sting of lust, seeks to gain absolute sway; and the same is the case with the so-called womb or uterus of women; the animal within them is desirous of procreating children and, when remaining unfruitful long beyond its proper time gets discontented and angry, and, wandering in every direction through the body, closes up the passages of the breath, and by obstructing respiration drives them to extremity causing all varieties of disease." PLATO while not a scientist gave a synopsis of the current view of Greek physicians as to hysteria. The same opinion persisted among the Roman physicians until the time of GALEN. ARETAEUS (the Roman Esquirol) adopts this idea to the movement of the womb in hysteria, and adds that, "it delights also, in fragrant smells, and advances toward them; and it has an aversion to fetid smells, and flies from them; and, on the whole the womb is like an animal within an animal." If the womb were suddenly carried upward "there would occur a choking as in epilepsy but without spasms, the limbs moving irregularly with loss of speech and impairment or loss of sensation."

The more frequent occurrence of hysteria in the young was accounted for by the belief that in old women the womb was more tightly bound down and was less free to wander all through the body. Galen believed that the womb being stationary could not wander about the body. He claimed that the menstrual blood dammed up in the uterus underwent putrefactive changes, which with undue retention of the female seminal fluid was the cause of hysteria. Aetius ascribed to the vapors proceeding from the retained menstrual and seminal fluid the phenomena of hysteria. Neither Galen, Aetius, nor Paulus Aeginita clearly comprehended Hippocrates although they thought by substituting vapors for his spirit of the womb, to make more tangible the influence of the uterus. In Shakespeare's time[1] the view that hysteria was an offspring of the "spirit of the womb" affecting both sexes was still dominant even among physicians. Certain miracles[2] were even then ascribed to the influence of suggestion on hysteric subjects.

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*Read before the DETROIT MEDICAL SOCIETY.

[1] THISELTON DYER: "Folklore of SHAKESPEARE."

[2] A. C. B. ALEXANDER: *Woman's Medical Journal*, February, 1901.

[3] Works, Sydenham edition.

[4] TIMAEUS.

In 1618, Charles Lepois denied the dependence of hysteria upon the uterus, calling attention to the fact that it occurs in men also, and claiming that the seat of hysteria is in the brain; and Van Helmont, in 1650, advocated the theory of Galen which with its "humoral" and other modifications was accepted by Primrose (1650), Sylvius (1660), Etmuller (1660), Purcell (1707), Pitcairne (1701), Schact (1747) and others. Hochstetter and Thomas Willis about the same time (1660), claimed that hysteria was a convulsive disease of cerebral origin. Highmore believed that the malady was a disease of the whole system. In Sydenham's opinion the animal spirit rushing upward from the womb affected the nervous system.[3] According to Morgagni the uterus was the starting point of hysteria, an irritating factor originating there being carried by the nerves to the brain, A. Cullen claimed that, while there was a relationship between hysteria and gastrointestinal disorders, hysteria was an affection of the nervous system originating in the reproductive apparatus. "It was a mobility of the system depending generally upon a plethoric state.[4]

Purcell[5] and Vogel located hysteria in the stomach; Amard in the lumbar enlargement of the cord; Boerhaave and Pomme in the nervous system. As Leofranc remarks: "Many of the earlier authors believed with Hippocrates in the aberrations of the uterus. A large number supposed the proximate cause of the disease to be the retention or putrefaction of the semen or menstrual blood and the distribution of malignant vapors over the body. More modern authors still continue to regard the uterus as the seat of the disease, but suppose no other pathologic alteration in its condition than some modification of its special nervous system. Somewhat later it was believed that hysteria was a general nervous affection with no more precise seat than the nerves."

The view of Lepois, advanced in 1618, is now practically dominant. The claim of Forest, that hysteria was due to retention of the female seminal fluid for which coitus was a cure, or, when not allowable uterine massage with musk sufficient to bring on an orgasm, was strongly held in the 18th and 19th centuries. Louyer Villermay (1816) asserted that the most frequent causes of hysteria are deprivations of the pleasures of love, griefs connected with the passion, and disorders of menstruation.

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[1] Doctor Jordon: "Diseases called the Suffocation of the Mother, 1603."

[2] Horsnet: "Declaration of Impostures, 1603."

[3] Havelock Ellis: "Psychology of Sex," Volume II, page 140.

[4] Glafira Abricosoff These de Paris, 1897.

[5] Gilles de la Tourette Traiti de L'Hysterie, Volume I.

Foville (1833) and **Landouzy** (1846) advocated somewhat similar views. **Laycock** (1840) quoted as "almost a medical proverb" the saying, *Salacitas major, major ad hysterium proclivitas,*" fully endorsing it.[1] More recently **Clouston**[2] defines hysteria as "the loss of the inhibitory influence exercised on the reproductive and sexual instincts of women by the higher mental and moral functions." Two gynecologists, **Hegar** in Germany and **Balls–Headly** in Australia, attributed hysteria as well as anemia largely to unsatisfied sexual desire including nonsatisfaction of the "ideal feelings." **Lombroso** and **Ferrero** while admitting that sexual feeling might be either heightened or depressed in hysteria, point out the frequency of what they termed "a paradoxical sexual instinct" in the hysteric by which, for instance, sexual frigidity is combined with intense sexual preoccupation; and the significant fact that the crimes of the hysteric nearly always revolve around the sexual sphere.

The modern views regarding the etiology of hysteria are well summed up by **Charles K. Mills**, who says that (1) The anatomical changes in hysteria are temporary. (2) These changes may be at any level of the cerebrospinal axis but are most commonly and most extensively cerebral. (3) They are both dynamic and vascular; the dynamic are of some undemonstrable molecular character; the vascular are either spastic or paretic, more frequently the former. (4) The psychic element enters in, that either on the one hand, violent mental stimuli which originate in the cerebral hemispheres are transmitted to vasomotor conductors; or, on the other hand, psychic passivity or torpor permits the undue activity of the lower nervous levels. From this summary of the manifestations of hysteria the question naturally arises, what are the characteristic symptoms of this disorder? To say with **Charcot** that the disorder is largely a psychic one occurring in hereditarily predisposed subjects whose essential psychic state is suggestibility, explains nothing. This hypothesis does not demarcate hysteria from neurasthenia nor from various states produced by physical and mental shock wherein the conditions described may obtain.

According to **Patrick** certain anesthesiæ are typical of hysteria: First, that in patches single or multiple, regular or irregular, without any relation to the distribution of the sensory nerves. These patches may be located anywhere on the body, but their existence is frequently unknown to the patient. The so-called stocking, glove, or sleeve anesthesia, that corresponds in distribution to the garment named, and stops short of a circular line about the extremity, occurs in scarcely any other disease except multiple neuritis and here only in a modified form, the anesthesia gradually decreasing from the extremity of the limb toward the trunk, and shading off into the normal. A hemianesthesia which is limited sharply and exactly by the middle line, especially if it involves the special sense on the same side, is equally characteristic. Another distinctive manifestation of most hysteric anesthesiæ, is that they do not interfere with cutaneous reflexes and automatic accomplishment. For instance, a woman with total anesthesia of the hand will tie a bow beneath her chin with her usual dexterity. A man with complete anesthesia of the buccal cavity will find no difficulty in the manipulation of the alimentary bolus. These acts would be impossible in organic anesthesia. An hysterical anesthesia too, is usually out of all proportion to the paralysis, whereas in organic affections just the reverse holds true, the motor functions suffering more than the sensory. A complete anesthesia of the entire body in a patient still able to walk about, is sure to be hysterical as is also one which varies rapidly in distribution or degree.

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[1] **Ellis**: op. cit.

[2] "Mental Diseases."

Among the anesthesiæ may be mentioned concentric contraction of the visual field with inversion of all the fields which are symmetrically contracted, that for blue being as small or smaller than that for red, while for the normal eye it is distinctly larger. A striking peculiarity of this contraction of the hysteric visual field is that, even when extreme, it does not cause the patient in moving about to collide with objects lying outside the hysteric, but within the normal field—that is, with objects which he does not see.

Another eye symptom pathognomonic of hysteria is monocular amaurosis with binocular vision, Prisms, the apparatus of Flees, and other devices demonstrate that under certain conditions the patient does see with the blind eye. Hysteric amblyopia and amaurosis are frequently accompanied by anesthesia of the eyelids and conjunctiva.

A monocular diplopia or polyopia is hysteric as is also micropsia or macropsia. These like many other symptoms may be unknown to the patient and must be sought.

Loss of the pharyngeal reflex, tenderness to the left of the cervical spine, and of the ovarian region and what PITRES has called haphalgesia are important stigmata. The last is rare and is an intense hyperesthesia of touch for substances, as brass, et cetera. In hysteric paralysis of an extremity the various muscular groups are nearly equally affected; isolated paralysis and hence paralytic deformities as wrist-drop and talipes are of rare occurrence. On the other hand deformity due to contracture is frequent. Relaxing the affected muscles by position has here no effect on the contracture. For instance, contracture of the fingers is not relaxed by forcible flexion of the wrist as in organic disease. Hysteric paralysis of the face is very rare while facial contracture, which may simulate it, is not very infrequent.

In hysteric hemiplegia or monoplegia there is not the "mowing gait," tipped pelvis and catching toe of organic disease. The paralyzed leg is dragged after the other or carefully pushed forward and the foot set down flat. "Steppage" is unknown in hysteria. Paralysis for certain acts or maneuvres and not for others executed by the same muscle is hysteric as is astasia—abasia in which the power of the legs is good with the patient in the recumbent posture, but not when he tries to stand or walk. Rhythmic spasm is almost without exception hysteric. In hysteric convulsions the pupillary light reflexes are not lost and the movements are purposive and hence palpably due to volitional impulse and imitate more or less closely movements executed with a purpose, while in convulsions of organic disease and of epilepsy there is reflex iridoplegia and the movements are incoordinate and often shock-like. In hysteric attacks too, and immediately following them there is a change in the ratio of the urinary phosphates, the ratio of the earthy to alkaline being as one to one instead of one to three, the normal. Finally the therapeutic test may quickly reveal the nature of the affection. Mental treatment, suggestion, hypnotism, or electricity, may produce so sudden a change in the symptoms as to make the diagnosis ridiculously easy. A severe hysteric affection may occur in an individual who has never shown any other hysteric symptoms, such an affection remaining unchanged for years, and be almost the sole sign of this omnivagrant disease. Further, fever, a rapid or subnormal pulse, retention or incontinence of urine, loss of sexual power or desire, loss of pupillary reflex to light and ankleclonus, although indicating as a rule organic disease, may occur as symptoms of hysteria.

The "mowing gait," "steppage," et cetera, are found in certain spastic hysterics. The heart in hysteria is usually distinguished as WHITTAKER remarks, by its easy excitability. The increase of action shows itself first after some emotional excitement or after stimulation by coffee, tea, alcohol, et cetera. It may amount to a genuine tachycardia though the frequency rarely exceeds one hundred to one hundred and thirty beats a minute. Retardation is much more rare though reduction in the frequency of the pulse has been noticed in the so-called sleep attacks. Real attacks of palpitation are rare, although the patient may complain of a feeling of distress even though the action of the heart is so feeble as to be imperceptible. The pulse is increased after the slightest effort or physical excitement, the mere thought of exertion being sometimes sufficent to excite it. In the rarer cases of retardation the reduction of the cardiac forces may lead to syncope.

Sleep attacks in hysteria often simulate apparent death. Hysteric angina is comparatively rare though much more frequent than real angina. The condition is recognized by the emotional disturbance which usually evokes an attack, and exists during it, as well as by the absence of organic disease. Patients affected with hysteric angina express great mental distress. They wring their hands, throw themselves about and succeed in exciting and alarming everybody about them. False angina is distinguished by a different situation of the pains which do not always begin in the neighborhood of the heart, but sometimes in the extremities or wander about in irregular ways. The attack is associated with other evidences of hysteria such as emotional manifestations, eructations, polyuria, et cetera. Sometimes an attack may be produced by pressure upon hysterogenic surfaces.

Vasomotor disturbances are frequent in hysteria, alternating flushing and blanching of the face being very common. There may be attacks of sudden coldness of the hands and feet which may shortly afterward become burning hot. There is often a sensation of numbness in the fingers and toes. Discoloration of the hands, more especially of the fingers, has been frequently noticed. Sometimes the hands are white and the ends of the fingers and nails blue. In some rare cases the joints only are blue while the rest of the fingers are red so that the appearance is that of blue rings with crimson borders. The spastic contractions may be so intense as to prevent the escape of blood after puncture; it even having been observed that cups withdraw less blood from hysteric than from healthy subjects. LANDOUZY records cases in which the stroke of the finger nail or of a pencil would bring out a red line which might extend itself out to a broad red stripe. Occasionally there develops in the middle of the stripe a pale red lash-like elevation so that curious lines can be traced upon the skin in autographism. This condition has been observed in epilepsy wherein it, however, does not persist so long. Hysteric autographism may last for years. In this connection belongs also the condition of vicarious menstruation with bleeding from the nose, mouth, ears, stomach, et cetera. Great difficulty in diagnosis often arises in this condition as hemoptysis and hematemesis are especially frequent in young anemic women. The profession is more willing to accept a vicarious hemorrhage from the nose as epistaxis than as relief of surcharged congestions about the head. Studies of blood changes which occur in connection with menstruation, entirely independent of the refinement of the so-called Stevenson wave, account for the escape of blood from dilated paretic vessels in unsupported places. While most cases of hemorrhage from the lung are due to manifest or latent tuberculosis there is no doubt that true hemoptysis results from suppressed menstruation. In this connection one is reminded of stigmatization as DOCTOR HARRIET C. B. ALEXANDER has pointed out. Many of these cases are due, as DOCTOR ALEXANDER and DOCTOR COOMES have shown, to suggestion. FACACHON and ALEXANDER were able by suggestion to raise vesicles like those of blisters on the skin. JENDRASSIK and KRAFT–EBING produced eschars, and BOUREN, BUROT, MABILLE, ROSS, and others induced hemorrhages. It is, therefore, not so surprising that it occurs in certain hysteric patients who have concentrated their minds continuously upon the wounds of CHRIST, as was the case with LOUISE LATEAU.

Hysteric affection of the lungs themselves is much more infrequent, but nervous disturbances in the larynx are among the most common expressions of the disease. Paroxysms of sneezing have frequently been recorded. So-called nervous cough is a great embarrassment in differential diagnosis. It is usually dry, unattended by expectoration and has a peculiar bellowing character distinguished as a "sheep cough." It is characterized by its excessive obstinacy, and often appears suddenly and as suddenly disappears under the influence of emotional excitement, the worst paroxysms being usually readily controlled for the time by diversion of the mind. Severity of the cough may eventually produce pain in the chest and hemoptysis.

Certain hysteric persons learn to draw blood from the mouth, gums, et cetera, sufficient to tinge the sputum. DOCTOR WHITTAKER reported the case of a hysteric patient who for one entire day, expectorated a blue sputum. Instruction was given in the presence of the patient to have the next fresh sputum examined chemically and microscopically. This put an end to the discharge.

Aphonia is one of the most common manifestations of hysteria usually in the form of adductor paralysis. The laryngoscope shows that the vocal cords are not approximated in phonation, though the glottis is closed in cough. The patients at times are unable to speak, but can still sing or express pain. Hysteric aphonia usually disappears but many cases remain aphonic for years. When the voice is suddenly restored by artificial means as by electricity, faith cures, miraculous interventions, et cetera, the cure as a rule is not permanent but returns when the patient is removed from the impression. In a case reported by LOWENFELD the patient's voice had been reduced to a whisper for years. She was induced to repeat the letters of the alphabet at first in a low tone and louder and louder without notice having been attracted to the voice. When the woman found that she could articulate the letters distinctly she began to speak. The patient had been convinced that she was unable to speak and had made no effort to do so. The trial showed the ability without any reference to the will. MARTINS reported a case of hysteric aphonia in a servant in which diagnosis was established by the laryngoscope. The physician assured the patient that she would be able to utter a loud sound the moment he made pressure on the larynx. Under pressure the patient spoke with a loud distinct voice. After repeated experiments of the same kind he told her that she would be able to speak as long as she held her hand on the larynx. This experiment also succeeded perfectly. As soon as she took her hand away she was unable to speak. This condition lasted for weeks.

The diagnosis of hysteria as the base upon which symptoms are built is not the recognition of a disease but of distinguishing in an individual whether this or that symptom is of hysteric origin or nature.

The most essential thing in excluding hysteria is the recognition of the symptoms of organic disease or neurasthenia. Most organic diseases have symptoms which hysteria may imitate. Thus hysteria, as SOKOLOUSKY has shown, very markedly simulates tuberculosis; but it cannot present the expectoration, the bacilli and the physical signs of the disease. While hysteria may imitate organic disease at the beginning it can easily be eliminated in the future course of the malady. Hysteria may present at the start the symptoms of an organic heart disease, but the conditions are easily separated later. Certain symptoms belong more definitely to hysteria, such as the paroxysmal attacks, the emotional dreams, sensory hemianesthesia, certain hyperesthesiæ, the globus hystericus, et cetera. It must, however, be remembered that hysteria is a real disease of the brain cortex, and that organic disorder may bring it on as a complication.

The mental types of the hysteric female are divided by DES CHAMPS into three classes: Cerebral, genital (or sexual), and neuropathic (sensory or motor). These types may be pure or intermixed. The general characteristics are an absolute want of equilibrium in sensibility and will power. There exists a mobility of humor in direct relation with facial impressionability to external influences (external ideas of perceptions) or to internal states (intrinsic ideas). The nerves vibrate to all sentiments coming from within or without and are registered without proper relation. One fact chased by another is forgotten. Another produces a momentary hyperexcitation which takes the place of truth, whence it is that falsehood is instinctive but the patient protests her good faith if accused of the same. This lack of equilibrium leads to decided modification of the mental faculties. Intellectual activity is overexcited, but in diverse degrees and variable ways according to the particular tendencies adopted. Absorbed by preoccupation or controlled by an idea they become indifferent to all else. Their ideas are abundant and they rapidly pass from the idea to the act. Their vivid imagination coupled with a bright intelligence gives them a seductive aspect, but their judgment is singularly limited, attenuated or false. They judge excellently from a nonpersonal standpoint. They are quick at discovering faults even of their own relatives, but faults attributed to themselves are repudiated. Their memory is capricious. They forget their faults, and their actions under impulse, albeit these may be consciously done.

The cerebral type is led by the intelligence. She ignores what passes in the sensorium commune. She has little or no coquetry; what there may be is the result of intention and temporary. There is an ethical sense, frankness and nobility in her ideas, disinterestedness and tact in her acts and she is capable of friendship. Her tastes carry her to male pursuits in which she succeeds. She often becomes what is called a "superior woman" and too often what is called an incomprehensible woman. She has but little guile.

To the sensual type, voluptuousness is the aim of life and the center of her acts and thoughts. She is well endowed with guile and extremely diplomatic. She is full of finesse but not very delicate; her lack of scruple spoils her tact. She is ruseful, dissimulating and unconsciously mendacious. She despises friendship and needs watching. If circumstances permit she loses all delicacy, reserve and modesty. She is destitute of scruples. Her crimes are coolly remorseless.

The neuropathic type is one to which the grasshopper is a burden. Her nerves are always on edge. She is an heroic invalid who displays the air of a martyr about trivialities. This character of the hysteric recalls, as KIERNAN remarks, the observation of MILNE EDWARDS concerning the monkey character. Levity is one of its salient features and its mobility is extreme. One can induce it to shift in an instant from one mood or train of ideas to another. It is now plunged into black melancholy and in a moment may be vastly amused at some object presented to its attention. To these qualities it owes its teasing tendencies.

One of the mental expressions of hysteria is the tendency of the patient to accuse herself or others of sexual immodesty. So frequent, and so well known to physicians are such accusations that a man trained in the traditions of the profession is obliged to regard any confession as to unchastity implicating a physician, and made by a woman, as being of morbid origin. The court records of all countries are blackened by cases in which physicians have been condemned innocently on the confessions of hysteric women. Confession, moreover, has long been regarded by jurists as of very dubious value as an evidence of guilt. The number of hysteric confessions is exceedingly large. In a case reported by LEGRAND DU SAULLE ("Les Hysteriques") a hysteric female sent five persons to Cayenne (the French penal settlement) on a charge of rape. A member of the French Medico-Psychologic Association suspected from an after examination of the alleged victim that the whole story was of hysteric origin. Through his efforts the innocence of the convicts at Cayenne was demonstrated and they were released from their unmerited confinement. TOULMOUCHE observed the case of a young girl given to devotional exercises and much inclined to flagellation and asceticism. She one day cut herself with scissors six hundred times on various parts of the body, and asserted the wounds were made by a man who tried to outrage her. She finally confessed that the wounds were all self-inflicted. HUCHARD had under observation an eighteen-year-old girl who accused the vicar of the parish of having raped her. She stated that one day while she was praying in the church the vicar shut all the doors and requested her to go with him into the sacristy. There (she claimed) he made obscene proposals to her, and as she indignantly refused he pointed a dagger at her; she fainted and during the faint (she alleged) he violated her. Upon being questioned during the trial her replies excited the suspicion of the medical expert. An examination ordered by the court revealed that she was still a virgin.

TARDIEU has reported the case of an inmate of a Gascony convent who claimed to have been made the victim of all sorts of outrages therein. Her father with full faith in what she said denounced the alleged criminals. Finding, however, that his daughter's story was untrue, he took his life. In another case cited by TARDIEU a girl charged two young men with having violated her, and introduced into her rectum and vagina, stones, splinters and iron, which had to be extracted with great pain. She had convulsive seizures followed by paralysis. The two men had been convicted and had been in prison for more than a year when the false nature of the accusation was discovered.

W. A. **Hammond** reports ("Treatise on Insanity") the case of a twenty-two-year-old girl who carried on a systematic course of deception for several months, and not only greatly injured an excellent young man but damaged her own character to such an extent that her family were compelled to move from where they lived. The patient, by wearing pads over her abdomen and gradually increasing their thickness led to inquiry from her mother's suspicion whether an abdominal tumor existed. It was decided to consult an eminent gynecologist, when the girl with tears, lamentations, and self-reproaches confessed that she was pregnant. Of course the distress of the family was very great. A great deal of anger was exhibited towards the supposed miscreant who had ruined a virtuous woman. For a long time she refused to reveal the name of her seducer, but finally one morning she came down stairs with a letter which she had written to her father in which a full (but false) revelation of all the circumstances was made. In this letter she declared that a gentleman they all knew and respected was her seducer. Arrangements for her confinement were made in a distant city. At the same time it was resolved by her parents to arrange if possible for a marriage with the alleged destroyer of their daughter's honor. The father accordingly had an interview at which the gentleman was offered the alternative of immediate marriage or instant death. Denials and protestations were useless. He consented to a marriage but only on condition that he should be granted an interview with the lady in presence of her parents. This was agreed to. A meeting took place at once and the gentleman, who was a lawyer, succeeded by his tact and the directness of his questions in exposing the fraud and obtaining a full confession.

According to W. **Goodell** the operative procedures of **Sir James Simpson** which were at first so wonderfully successful in coccygodynia owed their effects to its hysteric nature. Strange as it may seem, the coccygeal joint is liable to serve as a barometer of any kind of mental worry. The serious surgical blunder is, therefore, not infrequently made of extirpating for sheer hysteric coccygodynia this important bone, important from its muscular origins and insertions. He has known coccygodynia to attack a lady after the death of her mother. All treatment failed but it was finally abruptly cured by her great resentment at the second marriage of her father.

Gall-stone colic may occur in hysterics as a result of emotion without discoverable cause in the intestinal evacuation. **Kiernan** has reported cases in which it has recurred coincident with jealousy and had disappeared on increased attention by the husband. As C. K. **Mills** has shown, many of the symptoms of appendicitis may be mimicked by hysteria. These are the cases which are so often cured by Christian Scientist, Dowieite, and metaphysician.

Besides the limitation of the visual fields to white light, there exists at the same time decided disturbances of the color fields as **Preston** points out. There may be total loss of color perception, achromatopsia, or only disturbance of the relative position and extent of the different color fields. The first of these conditions, achromotopsia, is not common, at least in this country. When it exists all objects appear of a uniform gray or sepia color. The second variety of color disturbance is frequently met with in hysteria. This consists of a perversion of the normal color fields or of a reversal of the fields. In the normal eye the fields for color are not coextensive. Thus the larger field is for white light, then comes blue, red and green. The smallest field is that of violet. In hysteria these relations are altered. In some cases there is a simple restriction of the color fields n their normal color, but nearly always there is a reversal of the field. Thus the most frequent change is between the red and blue. Instead of blue occupying the largest field, as it does normally, its place is taken by red. **Parinaud**, commenting upon the fact that in hysteria the largest color field is that of red, is of the opinion that the well-known predilection of hysterics for red may be thus explained. Hysteria of an epidemic type occurs among all nations and races. The epidemic type was especially common during the middle ages, and very often furnished the basis for alleged "witch sabbaths." Usually these victims of hysteria had visual, auditory, olfactory and general hallucinations. They had visions of lighted torches, balls of fire, fantastic animals or imaginary personages. Sounds of blasphemies, lascivious words or horrible suggestions rung in their ears. These subjective symptoms were, as **Preston** remarks, accompanied by convulsions, contractures, loss of consciousness and the like. Similar epidemics under certain conditions of excitement, religious and otherwise, occur from time to time among girls, especially in rural towns.

Some years ago in a small German village two young girls awoke one morning to find their hair had been cut close to their scalp. They related that a person had come in their room during the night and cut their hair. Several girls subsequently experienced the same thing, and finally a young woman who was to be married the next day, lost her hair. Some of the citizens volunteered to watch the homes of young women. These citizens received anonymous letters that their whiskers would be cut. On the door of a public building was found the following distich:

"We are thirty,
At night we're spry,
By day from the pane we spy,
And laugh at the passers by.
Now merely the hair we clip,
Later the head, off we'll snip."

It was shown later that the girls and women had cut off their own hair and indulged in other pranks. The performers had hysteric anesthesia and convulsions.

Hysteric convulsions are usually excited by some sudden emotion or exceptionally by some sudden accumulation of waste material as in epilepsy and eclampsia. While convulsions of the emotional type are much more frequent among the lower races and the illy trained, the hysteric convulsion due to autointoxication is more frequent among the hysteric nondegenerates of the higher class. Sometimes the motor disturbance of the convulsion is confined entirely to pantomimic expression of emotion, such as wringing the hands, et cetera. As a rule in these conditions there is some muscular rigidity. To some degree the character of the patient modifies the attack. While consciousness is not lost it is somewhat disturbed and the identity of persons around the patient is confused. In the mild type, as **Preston** remarks, the limbs are under control of the patient's confused volition. If the patient be lying on her back on the bed or floor she will kick her feet violently and throw her arms about in a distinctly purposive manner. Quite often she will seize some one standing near. Efforts at forcible restraint will markedly increase the violence of the movements. As a rule there is no disturbance of the circulation or the respiration. The pulse is not increased more than the active exertion would warrant, and if there be no great physical effort it remains quite normal. The respiration is normal except in certain cases of "hysteric rapid respiration" when it becomes very quick and shallow. The face is neither pale nor congested. There is a peculiar and rather characteristic quiver of the eyelids when the eyes are closed, which is of considerable diagnostic value. The pupils show no constant or characteristic change. This minor attack may last from a few minutes to several hours, and when it subsides, the patient may be a little depressed or even appear quite normal.

There are no very distinct prodromata although it can usually be traced to some distinct, or seemingly trivial exciting cause. The first, or epileptoid period of the hysteric convulsion resembles *grand mal*, though to this there are numerous exceptions; the patient does not bite the tongue nor in falling does she injure herself. Generally she sees and hears nothing. The eyelids oscillate slightly but the claim that the patient is usually peeping under eyelids is untrue. The first phase of the epileptoid period is one of rigidity, the arms and legs being usually extended, and the hands clasping the trunk mildly opisthotonic. The breath is arrested, and the pulse accelerated. Consciousness is obscured and even lost although not to the extent of epileptic. Usually pressure over the ovaries, or the faradic current will arrest the attack. There are, however, exceptions, for in some hysterics, pressure on the hysterogenic zones such as the abdomen, over the ovaries, and the inside of the thighs may be followed by increased lethargy and unconsciousness. **Tourette** reports a case of a girl who was seized by the thighs, thrown into lethargy, and violated. **Mabille** has had a similar experience. **Brouardel** reports the case of a girl, of twenty-three, who being raped during an hysteric crisis became pregnant. Her attacks, which began at the time of her father's death, were typically hysteric; the intellectual powers being in complete abeyance. The case was abandoned by the public prosecutor. The tonic condition is succeeded by the clonic phase. Here the muscles of the face and limbs are thrown into rhythmic movements. Consciousness is considerably blunted. The final phase of the first period is that of resolution. The patient becomes relaxed, lies with head to one side, and there is much sialorrhea. In only exceptional cases is there incontinence of urine or feces. Slight sleep may occur.

After a short interval the second period commences, and because of its extravagant disordered contortions and its seemingly regulated purposive performances it has been called the period of "clownism." The most common movement in this stage is, as **J. Hendrie Lloyd** points out, the so-called "arc of a circle" in which the patient assumes a position of complete or incomplete opisthotonos. The patient may assume this position lying either on her back or on her side. Other movements of extreme contortion occur. **Sauvages** applied the term "hysteria libidinosa" to cases in which during convulsion the patient alternates rapidly from opisthotonos to dorsal decubitus. The most common of the regulated type is, as **Lloyd** remarks, that called "salutation" in which the patient lying on her back suddenly bends the body forward until the head almost touches the knees; this is repeated many times. Others consist in bending and arching the body and flexing and extending the limbs in various ways, rapidly repeated, usually while the patient reclines on her bed. This extreme motor agitation seems to have a mental association or to be the expression of a mental state. Sometimes this mental disorder appears to bystanders to be quite alarming and may seem to have a veritable demoniac element in it. There is no loss of consciousness during the second period. The patient seems to react to some mental stimulus, but there is not the association with delusions and hallucinations that occur in the next period.

The next or third period has been called by CHARCOT the period of passionate attitudes. In this period BREUER and FREUD see the hallucinatory reproduction of a recollection which is full of significance for the origin of the hysteric manifestations. FREUD believes that in nearly every case a primary lesion of the sexual emotional sphere exists dating from puberty. In nearly every case the intimately private nature of the lesion causes it to be carefully hidden, and to be forcibly ignored, mentally, by the victim of it. During this third period the patient does not feel pain or touch. The conjunctivæ are insensible. Hearing is lost. The patient is unconscious or oblivious after the attack, although some remembrances of the period may be retained. It is very dangerous, however, to accept such remembrances as facts since the patient may so remember her sexual emotional state as to ascribe to it an objective origin, for which some one else is responsible. The fourth period has been denominated by CHARCOT the "period of delire." Delire is not synonymous with delirium, but simply indicates an intellectual disturbance which may or may not involve the emotional sphere. Practically this period is the returning to self-consciousness from the previous period of emotional disturbance. During this period, according to LLOYD, the sensory stigmata which are seen in the third stage may persist. Added to them are motor stigmata generally absent before. The most common of these last are various forms of contracture which may persist for days after the seizure. Other motor stigmata sometimes originating in this period and persisting as relics of the convulsion are the several varieties of paralysis and tremor. The mental state may pass into an obstinate mutism or even into trance or lethargy.

CHARCOT, in 1888, claimed that, so-called, hysteric unilateral paralysis of the facial, lingual and oculomotor muscles are in reality hemispasms. This view of CHARCOT was later abandoned by him and his followers. HITZIG, of Halle, Germany, has shown that disorders of the oculomotor mechanisms are comparatively rare in hysteria, though derangements of the visual fields and phenomena due to fatigue are very common. He reports the case of a thirty-six-year-old Polish laborer who had previously suffered from "inflammation of the eyes." He had indulged freely in whiskey. In August, 1895, he wounded himself in the leg. The wound healed rapidly, but unfortunately he conceived the idea that, as there had been no suppuration, inflammation would occur elsewhere. After a week, in reality inflammation appeared in the eyes, followed by diplopia and ptosis. This condition lasted a long time without distressing him, but when he found himself unable to see his childen, who had returned home, in September, 1896, he attempted suicide by drowning, and for two days appeared insane. On admission (September, 1896) there was complete ptosis on both sides; both eyes were turned inward and downward. Later (in November) the pupil did not react to light and the patient professed to see nothing. There was no evidence of any spasm of the orbicularis muscles. There was partial unilateral loss of taste and smell. Tactile sensation was absent over the whole body, and there was analgesia in the right arm, left leg, and left half of the trunk, neck and head. Temporary improvement in the eye symptoms had followed chloroform narcosis in October, but their complete disappearance followed electricity and suggestion in November. A temporary partial hysterical deafness was likewise recovered from. January, 1897, the patient's condition was practically normal in every respect. Some of the eye symptoms were evidently due to spasm, namely, the squinting and the myosis.

Hitzig ascribed these phenomena to hysteric paralysis of the levator muscles of the eyelids. Kiernan reports a case which corroborates that reported by Hitzig. The patient, a thirty-three-year-old married multipara, comes from a family rife with neurotic taint. Neuroses of various types are frequent in this family for three generations. One sister has periodical attacks of nymphomania, whose morbid nature she recognizes, and is therefore able to control. The other children suffer from cerebral phenomena from very slight causes. One brother has had infantile hemiplegia with athetoid phenomena. There have been numerous children for three generations, the greater proportion of whom died in infancy. The present patient has visceral neuroses, simulating at times peritonitis and gall-stone colic and attended by pyrexia, followed by apyretic states when the temperature falls from 109° to 90° in a few hours, without corresponding constitutional disturbances. Paralysis and local anesthesia are easily produced in this state from suggestion. On one occasion discolorations of the skin resulted from an accidental suggestion that the skin looked slightly reddened at the seat of a paresthesia. The patient had an attack of "visceralgia" simulating gall-stone colic. This left her much exhausted, and in this state the suggestion was made by a neighbor that her eyes looked weak; whereupon slight amblyopia resulted, followed by double ptosis. The "visceralgia" disappeared under what was chiefly moral treatment, but the ptosis persisted for some weeks. One day while the patient was relating her symptoms a window fell and she passed into a hypnotic state. While in this state the suggestion was made that her ptosis was under full control of her will and that she would hereafter be able to control it. On awakening her from the hypnotic state the ptosis and amblyopia disappeared.

The last attack occurred under the following circumstances: The patient while East had been treated for a headache by the correction of refractive errors with glasses. Soon after her return to Chicago she suffered with a very obstinate suboccipital headache. Through much talk by her friends she was persuaded that this headache was of optical origin and that the glasses had been improperly fitted. She was found to be badly constipated. The persuasion, however, that the eye had been improperly fitted with glasses continued. She finally had a recurrence of the old symptoms of ptosis and amblyopia. This condition, however, disappeared with the disappearance of the headache, which yielded very rapidly to dietetic treatment and cathartics. Since this time there has been no return of the ptosis and the patient has not complained of either eye-strain or headache.

According to Galezowski, Parinaud and Borel, a true hysteric myopia or hyperopia may occur. The typical globus hystericus is in the opinion of PRESTON in part, at least, a contracture. Some patients describe this peculiar phenomenon as a ball which begins in the region of the stomach and rapidly ascends to the throat. When it has reached the throat it remains a greater or less length of time in that position. Rarely the ball seems a very small body in the throat, and again merely a sense of constriction. While perhaps a large part of this phenomenon is purely psychic, and belongs to the category of sensory disturbances, it is probable that there is present more or less contracture of muscle fiber.

Contracture of the bladder with retention of urine is not uncommon. It should be remembered, however, that the bladder is, as Mosso and PELLACANI have shown, an even more delicate esthesiometer than the iris and probably the most delicate in the body. Mosso and PELLACANI found that contraction of the bladder follows directly on the slightest stimulation of any sensory nerve and also that all the varying conditions of the organism which raise the blood pressure and excite the respiratory centers produce an immediate and measurable effect upon the bladder. These investigators found by experiments upon several young women that when a plethysmograph was brought into connection with the bladder, even a slight touch with the finger on the back of the subject's hand produced a noticeable contraction of the bladder, and whenever the subject spoke or was spoken to, or made the slightest mental exertion, there was a similar contraction. These reactions are much more delicate than those of the blood-vessels and cannot be paralleled by any other part of the organism. The bladder, as BORN puts it, is the mirror of the soul; it would be equally correct to say that to some extent the soul is the mirror of the bladder. The fainter vesical contractions cannot be said to play a recognizable part in emotion, but when they attain a somewhat higher degree of intensity they form a well-recognized part. "A nervous bladder," as GOODELL puts it, "is one of the earliest symptoms of a nervous brain."[7] Contraction of the bladder plays a part in the constitution of various emotional states of fear, anxiety and suspense.

In regard to the diagnosis of hysteria it must be remembered that hysteria bears the same relation to neurasthenia as paretic dementia does to locomotor ataxia, that is to say, hysteria is the cerebral type of a neurosis, the spinal symptoms of which are commonest in neurasthenia. Since hysteria may be produced by any condition causing nervous disorder or disease, it may complicate every one of the great neuroses, as well as the great constitutional disorders. It may occur as a temporary expression of conditions of autointoxication or during the period of nervous adynamia after exhausting diseases. When it occurs in degenerate organisms or more properly in organisms hereditarily defective, the disorder will be peculiarly protracted and the nerve symptoms will simulate organic diseases to a marked degree. It is obvious therefore, that in diagnosis the underlying state of the hysteric has to be taken into consideration.

In regard to treatment it must be remembered that as hysteria is fostered by psychic influences, like sympathy and conditions producing introspection, removal from the home environment and from contact with relatives, especially husband, father, mother, sisters or brothers, is imperatively indicated. Treatment under other conditions would simply be the removal of symptoms and not the destruction of the underlying neuroses which constitute hysteria. So far as surgical treatment is concerned, it must be admitted that any source of irritation whether in the eyes, ears, nose, throat or genitalia should be removed. The morbid mentality of the hysteric will center around any local irritation, psychoneurotic symptoms of tenfold the seeming gravity of the affection. It should be remembered that the underlying neurosis may aggravate every one of these local irritations, even including refraction defects.

Regarding medicinal treatment the conscious or unconscious sexual factor in hysteria requires regulation. Here camphor monobromate will be found of value, but the psychosexual element must be diverted into healthier channels by a course of reading literature and science. The rest cure treatment, as ordinarily carried out in the homes of laymen especially, is a failure since the psychic element is completely neglected, and introspection which is the great danger of the hysteric is encouraged. Very frequently to the hysteric state it adds obsessions and imperative conceptions of a protracted obstinate type. The hysteric should be drawn out of herself, but the ordinary rest cure drives her into herself, the patient's attention being too much concentrated on herself by it. The error is often made that a fattened hysteric is a cured hysteric. The fact is forgotten that lipomatosis is a product of suboxidation as morbid as rheumatism or gout. What the hysteric needs is not fat but increased powers of the higher inhibitions. The rest cure, therefore, which neglects this factor is worse than useless. It can never be carried out properly unless under direct daily supervision of the physician.

So far as the forensic aspects of hysteria are concerned, it must be remembered that the hysteric may commit atrociously brutal crimes without consciousness of their brutality. Many of the poisonings of whole families by servant girls in their teens, are of this nature. BRINVILLIERS, the famous poisoner of France, had the usual hysteric combination of extreme piety and atrocious implacability regarding others. The physician and the clergyman are often the victims of hysteric accusations, sometimes forced by the jealousy of a drunken husband, since alcohol in excess peculiarly tends to create, as KIERNAN, SPITZKA and others have shown, morbid jealousy of a strongly marked delusional type. For the acceptance of such delusions the psychosexuality of the hysteric is a peculiarly fertile soil. In examination of hysterics, therefore, especially the hysteric wives of drunkard husbands, the physician cannot exercise too great caution.

In conclusion, the fact cannot be too strongly emphasized that hysteria is a grave constitutional neurosis with serious forensic and sociologic consequences which may yield to treatment, if dealt with as a constitutional neurosis, but will only be aggravated by treatment of its symptoms.

THE TREATMENT OF ACUTE RHEUMATISM.*

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IT is an interesting fact that although our ideas of the nature of rheumatism have undergone a great change in the last twenty years, no essential modification of therapeutic methods has resulted. The reasons for this are, I think, not far to seek, and they are instructive to note. Though definite knowledge is not yet available, it becomes more and more probable that rheumatism is an infectious disease closely related to pyemia and septicemia. It also becomes probable that rheumatism is due, not to a single specific microorganism, but that many germs may be able to produce it, the various pyogenic bacteria being those most closely associated with it at the present time. The clinical identity of all cases, sometimes alleged, need not detain us long now. Enough to point out that in the first place closer examination may reveal the existence of several groups; in the second place, that clinical resemblance does not always mean etiologic identity, as may be seen in suppuration.

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The fact that we have as yet no specifics against the pyogenic bacteria explains why rheumatism has not been subjected to that kind of treatment on a large scale. Even a specific antitoxin would hardly be promising, in view of the clinical difficulty of discovering in any given case the exact cause at a time favorable for treatment. Julius Weiss (*Centralblatt fuer inn. Med.*, Number XVII, 1896) made some attempts at treating patients with the blood-serum of those recently recovered from rheumatism. His results were not encouraging. In three out of ten cases the patients were worse than before, and in the others the course and severity of the disease were not perceptibly affected. Boucheron (Rpts rend. de la Soc. de Biol., March 23, 1900) claims good results from the use of Marmorek's antistreptococcus serum, "added to the traditional treatment." He used one-fourth to one cubic centimeter of the serum every day or every other day. As he does not give details it is impossible to determine how much was due to the "traditional treatment" carried out at the same time. Stengel mentions three cases that improved under antistreptococcus serum, but also without details. No doubt other experiments have been made but not reported. I myself know of a single case in which the results were not promising. In general Marmorek's serum has not given good results in human streptococcus infection, and its use in rheumatism at the present stage of our knowledge is anything but scientific.

Perhaps the specific biologic treatment of rheumatism would have been more widely attempted had it not been for the fact that even before the prevalence of the germ theory, antiseptic drugs were used by the mouth, and at a very early period injected into the affected joints. The former seemed more definitely useful, and Singer's more recent attempts with intravenous injections of bichlorid of mercury indicate that it is associated with some risk, and is not more effective than the simpler and milder measures with the salicylates. Treatment based on clinical experience with the latter is, therefore, most deserving our attention, and while I cannot bring you anything new, I can remind you of what I am sure many of you have noticed in practice—that the principles of treatment are not as well understood and the results not as uniformly good as could be desired. Careful study of the subject is, therefore, well worth while.

Before taking up the treatment proper, a few words as to diagnosis may be pardoned. Though the clinical picture of rheumatism is extremely variable, the disease is one that is usually not difficult to recognize, yet in every case it is necessary to search for a primary focus from which a septic infection simulating rheumatism might develop. In children the diagnosis is often difficult, and all the more important. More important than the diagnosis of rheumatism is the complete examination of the patient, which must not be neglected. The condition of all the important organs, especially the serous membranes, and the size, outline, sounds and rhythm of the heart, must be carefully noted at the beginning, and any change at a subsequent period carefully investigated. It must be remembered that rheumatism is more than arthritis, and that its most important lesions are often concealed in the early stages. This has an obvious bearing on prognosis.

First in the treatment of rheumatism must be considered the matter of rest. However mild the symptoms, the patient should be put to bed and kept from all physical and mental exertion. The room should be well aired and free from draughts. The bed should be narrow enough to permit handling the patient from both sides; the mattress not too soft; the covers warm but not heavy, and not warm enough to overheat the patient. Flannel or flannelette nightclothes should be worn. In case of sweating the skin must be carefully dried; the bedclothes, if wet, replaced by dry ones. Rest for the affected joints is even more important, in some cases, than general rest. It should be secured by well-applied bandages, preferably woolen, and in addition a light splint may often be used with advantage. The joint should be put in the position that gives most comfort. Immovable dressings of starch or silicate of sodium may be used, but plaster is usually not as useful as those that can be easily removed.

The bed should be kept as long as there is fever and joint pain, and longer if the heart has been involved. Late in the disease, with a sound heart, it is often useful to allow the patient to be up even with a slight elevation of temperature and some pain, but the effect of this must be carefully observed.

The diet in the febrile stage must be light, consisting largely of milk, with eggs, broths, gruels and fruit-juices. Water should be given freely, but on account of the danger of dilatation of the stomach, carbonated waters should be used sparingly. Tea, coffee and alcoholics should be avoided.

A mild purgative, such as calomel in small doses, should be given in the beginning, and the usual care taken to prevent constipation all through the course.

In avoiding thus far the mention of drugs I have not wished to convey the idea that they are not to be used, but merely to emphasize the importance of other measures, for too often we see patients with rheumatism taking medicine well adapted to their condition, but failing to do well because of neglect of rest, diet, et cetera. Though rheumatism often runs an abortive course, we have no way of knowing in practice when this will take place. It is, therefore, necessary to treat all cases as if there was danger of a severe course.

We often hear the idea advanced that we have a specific for rheumatism in the salicylates, yet it requires but little experience to discover that the action of salicylates in rheumatism is not so certain and unmistakable as that of quinin in malarial fever, and I need not remind you that many deny all curative action to the salicylates, holding that they merely relieve symptoms. Without taking up your time with a résumé of this subject, the literature of which is very large, allow me to state rather dogmatically my own opinion, hoping the discussion will bring out the opinions and experiences of others. That salicylates have a marked and valuable action in rheumatism I do not doubt. They not only relieve pain and lower temperature, but it seems to me certain that they affect the morbid process in some way so as to check its severity. This action I believe is not limited to the so-called typical cases of rheumatism, but may often be observed in cases more distinctly septic. Quite recently I have seen a case in which, after a laparotomy without local suppuration, pleurisy with effusion and arthritis of the shoulder occurred on the right side. Salol in full doses had a prompt effect, precisely like that in rheumatism, but, just as in that, did not prevent a return of the morbid process, this time in the form of plebitis of the left femoral vein. It is true that some would call such a case rheumatism, but I think it a good example of the possibility, in some instances, of drawing a line between that and septic disease.

Failure to secure good results with the salycylates is often due to insufficient doses. The close relation between the effective therapeutic and the toxic dose makes me incline to the view that these drugs act, partly at least, by checking bacterial growth.

Another cause of failure is premature cessation of the administration of the drug. In many reports we find that the course of the disease was not shortened by the treatment, but we also often find that the medication was stopped with the first subsidence of symptoms, a relapse or series of relapses following, and not being pursued as actively as they should have been. It seems clear that in order to get good results, we must saturate the body well with the remedy. In general, not less than one hundred and twenty grains of sodium salicylate or a similar preparation should be given within twelve hours after the patient is put under treatment, in the case of a man of average weight. This will be more likely to relieve the pain and other symptoms than a smaller dose, and the total amount given will not be as large as when doses half the size are used. Two or three such doses can be given in the next day or two, but will not often be necessary. After a definite effect has thus been produced, the drug should be continued in doses of from thirty to sixty grains a day, stopping entirely as soon as the temperature and joints permit, but it should be renewed in full doses on the first intimation of a relapse. The sodium salicylate can be conbined with advantage with an alkali, such as sodium carbonate, and given in camphor water or any other vehicle. It can be given by the rectum in doses of one-half to one drachm, in water. Salol or salophen can be substituted for the sodium salt, the former being easier to take, though it is sometimes objected to on account of its odor, or the black urine which often alarms the patient, and sometimes, with less reason, the attendant. Still other salicylic compounds are preferred by some, but those mentioned are well tested. I have often found that the acid itself can be taken in large doses without causing unpleasant symptoms on the part of the stomach. It should be needless to add that such drugs are not to be used in patients with acute nephritis or with old interstitial nephritis. In such cases one must depend on general treatment, with or without alkalies. In chronic or subacute parenchymatous nephritis, salicylates can often be taken in large quantities without increasing the evidences of renal disease, but it should not be prescribed unless the patient and the urine can be carefully watched.

Without wishing to recommend such doses, it may be interesting to report some cases under my observation, but not under my care, in which enormous doses of salicylates were used. In a young girl with severe acute articular rheumatism three hundred and sixty grains of sodium salicylate were taken, along with alkalies, within eighteen hours. At the end of that time the urine contained a considerable quantity of blood, without casts, and enormous numbers of crystals of salicyluric acid. The hematuria soon ceased and no further result followed from the intoxication. Severe pericardial effusion developed soon after.

A man with dysentery took salol in doses of one hundred and fifty grains daily for thirty-one days, getting four thousand six hundred grains, according to the records. During this time the urine was negative, but at the end of the month marked and characteristic salicylic acid delirium occurred, and the urine showed a trace of blood and albumin, with a few hyaline casts. Recovery rapidly followed cessation of the medicine. Of course, in these cases it is impossible to say what proportion of the dose was absorbed, and we must not forget that much smaller doses have caused dangerous symptoms or even death. In many cases, however, the dangerous effects would seem to have been due to an idiosyncrasy that could not be known beforehand.

Medicines applied to the joints have been much used in rheumatism, but in the acute stage it is doubtful if they are of any real benefit. When their use involves handling of the joints they are worse than useless. Oil of wintergreen may do good by absorption, but its salicylic acid does not reach the joint any more readily than when taken by the stomach. In the later stages, mild counterirritation, as by ichthyol, often is beneficial. But fomentations, with or without alkaline water, are also valuable then, and still later massage and passive motion have their places.

I say nothing in favor of antipyrin and other drugs or its class. Although they relieve pain and fever they are not as certain as salicylates and are no less dangerous.

The treatment of the fever and arthritis is not the only, or even the chief indication in rheumatism. More important still is the cardiac involvement. For this, prophylaxis by rest and diet is essential, and even if we find no physical signs of endo- or pericarditis we must remember that they are often latent. Here, too, the salicylates are valuable. Few now believe that heart complications are more frequent under salicylic treatment properly carried out. As SANSOM says, such treatment ministers to comfort, and thus brings about systemic calm, often of the first importance in obtaining good results in heart disease. When evidences of heart disease are present, whether endocardial, pericardial or myocardial, the salicylates should be continued carefully, and an ice-bag be kept over the heart. Blisters are recommended by many, and it is certain that we can often see quick relief of pain and rapid disappearance of fluid after their use in pericarditis, but on the other hand, the same things can often be seen under the use of the ice-bag and salicylates, and a blister often interferes with satisfactory examinations of the heart.

A rare but serious complication is hyperpyrexia. I agree with those who hold that this is less frequent under the salicylic treatment, but it sometimes occurs under these remedies. Pushing them to dangerous doses does no good; antipyrin often does positive harm. Here we should use the cold bath, putting the patient for fifteen or twenty minutes in a bath at 65° to 70° Fahrenheit, with ice-water poured over the head, and friction to the extremities. If this cannot be done, repeated cold packs should be used. For the delirium, bromids and chloral may be used in addition to the hydriatic treatment. For collapse, hot coffee, hot water-bags over the heart, or strychnin should be used.

In convalescence, with its anemia and muscular weakness, the food must be cautiously increased, observing the effect on the heart, temperature and joints. Constipation must be guarded against. Iron is often of signal benefit, but sometimes seems to aggravate the symptoms. Arsenic or bichlorid of mercury then seem to be more effective. Exercise and bathing must now be taken up with care.

The condition of the heart must be followed for weeks or months. A murmur developing during the acute stage is no longer looked upon as giving positive evidence of endocarditis, but not rarely, even without such symptoms, we can observe signs of retraction of a valve long after the acute rheumatism, but doubtless due to it.

In a paper necessarily limited in length, it is impossible to discuss the treatment of various types of patient and disease. In rheumatic arthritis as in other diseases individualization is necessary.

TUBERCULOSIS OF THE LARYNX.*

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IN considering tuberculosis of the larynx, we may define it as the neoplastic and retrograde changes taking place in the larynx through the activity of the tubercle bacilli. There has been considerable discussion among the various authorities as to whether the disease is ever primary or whether it is always secondary to some previous involvement of the pulmonary area. While many observers have reported cases which in their opinion seemed without doubt to be primary, the number presented is such a small percentage that for practical purposes we may consider that the disease is usually secondary. With regard to its frequency, LENNOX BROWN states that in his hospital experience it forms two per cent. of all diseases of the throat, and eleven per cent. of those of the larynx. HEINZE, of Leipzig, states that in autopsies on over one thousand cases of pulmonary tuberculosis fifty-one per cent. had ulcerations in the larynx, and further that these ulcerations were almost never found in connection with tuberculosis of any other organ when the lungs were intact. When we consider the prevalence of pulmonary tuberculosis and learn that even the more conservative writers admit that thirteen to thirty per cent. of patients with pulmonary tuberculosis show tubercular disease in the larynx, it would seem that this disease is much more common than we at first thought might imagine. The disease is more common in males than in females, in about the proportion of three to two, and the third decade of life claims the most victims.

In considering the question of etiology, we are confronted with much the same questions as face us when we consider what influences predispose the individual to tuberculosis in other regions of the body. No evidence has been satisfactorily advanced to show that overuse of the voice-box or the following of an occupation which strains the vocal apparatus has any special predisposing affect. Habits which tend to lower the vitality of the individual or methods of life, forced or adopted, which keep the system below par, undoubtedly induce, as in pulmonary tuberculosis, a lack of cellular resistance. Many chronic catarrhal affections of the larynx are undoubtedly caused by nasal insufficiency, but it is certainly an open question whether so-called nasal catarrh or obstruction conduces to the development of laryngeal tuberculosis. When we consider how the larynx in an ordinary case of pulmonary tuberculosis is more or less constantly covered with sputum from the affected area below, we are led to wonder why this organ escapes even as often as it does. The pathologic changes usually found are those which are characteristic of tubercular formation in general; namely, the formation of nodules or tubercles which have a tendency to coalesce and which sooner or later show the characteristic retrograde changes that generally lead to extensive ulceration. The interarytenoid space, wherein the mucous membrane lies in folds owing to the necessity for mobility of the arytenoid cartilages, is a point at which the disease frequently manifests itself. Owing to the fact that this membrane is so constantly active and thus, at least theoretically, prone to erosions of the epithelium, the subepithelial tissues are open to direct infection. While this provision of nature permits of the elastic use of the epithelial membrane, it undoubtedly often prepares a site for infection.

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* Read before the DETROIT ACADEMY OF MEDICINE.

While the early symptomatology of tuberculosis of the larynx is often obscure, subjectively or objectively, the late symptomatology is so very distressing and obvious that it furnishes one of the most striking clinical pictures which is ever presented to the medical practitioner. Changes in the voice, such as slight hoarseness or intermittent aphonia, are symptoms which are usually the first to attract attention to the laryngeal apparatus. If the epiglottis be attacked, a sense of fullness or stiffness in the throat during the act of swallowing is another early symptom. As the disease progresses and the swelling and ulceration becomes more extensive, the discomfort first experienced passes on gradually to assume most distressing proportions. The utterance of the patient is simply that of a whisper which soon loses its clear quality and becomes hoarse; and vocalization at length becomes a painful procedure. What at first was simply a slight pain upon swallowing changes so that the taking of liquids or solids is accompanied by the most excruciating sensations. The distress of the mechanical acts which prolong life assumes such dreadful proportions that the unfortunate patient declines nourishment except at long intervals. The unfortunate being is tortured by the agony of thirst and starvation, as the slaking of the former and the relief of the latter provokes such lancinating pains that the dread of their repetition forces him to push aside what is most essential for fortifying the system. In truth, the poor victim prefers, oftentimes, a slow starvation while he is surrounded by the most inviting and appetizing dainties. In considering the symptomatology, I have vividly in mind the sufferings of a personal friend who made a long and gallant fight, but at last voluntarily refused all medication and nourishment in order that the struggle might be over as soon as possible.

The laryngoscopic appearance is usually at first an anemia of the mucous membrane, particularly over the arytenoid cartilages, which is later succeeded by the swelling either of the arytenoids or of the other infected parts. In case the arytenoids are swollen, they assume a "clubbed" appearance which is quite characteristic. Ulcerations soon appear, at first superficial and later deep, which oftentimes involve a considerable portion of the laryngeal area with frequent destruction of the epiglottis.

The treatment of laryngeal tuberculosis is a subject which needs to be considered from several standpoints. For a long time local treatment of the larynx in this condition was considered quite unavailing and therapeutic measures were limited to such palliative applications as would afford the patient temporary relief so that nourishment might be taken with more comfort. The topical use of lactic acid, however, has proven to be of considerable benefit as it seems to have a peculiar selective action upon the diseased tissues, particularly if necrotic layers are removed with the curet. The statistics which have been published in regard to the benefit derived from these agents are certainly encouraging. In the writer's personal experience patients have expressed great relief and laryngoscopic examination has shown healthier conditions with even cicatrization for a time after their application. One patient, especially, whose laryngeal structures were so involved that starvation seemed imminent, had the larynx swabbed daily with at first a weak and afterward a strong solution of lactic acid with the gratifying result that the dysphagia almost entirely disappeared, and the patient was comfortable for several months until the pulmonary symptoms had increased to such an extent that death resulted. The use of lactic acid, however, is not always attended with such beneficial effect even in tubercular lesions of the upper air-passages where it is easy to apply. In two of the writer's cases of ulceration of the pharynx, in which the acid could be thoroughly rubbed into the infiltrated tissue, its daily use did not seem to stay the disease or mitigate the symptoms. In some larynges the insufflation of anodyne powders containing iodoform or morphia affords temporary relief, while in others the use of finely divided powder gives rise to irritating cough. In such cases the use of cocain is the principal agent which is to be relied upon to numb the parts so that concentrated nourishment and various fluids can be taken into the stomach. In some cases the insufflation of orthoform will give several hours of respite; in others the fluid spray and powders are alike irritating and recourse must be had to oleaginous sprays. Of these the writer has found that the use of menthol and sometimes of creosote is attended with relief. In others again the hypodermic use of morphia must be resorted to in order to secure even a few hours of sleep or respite, or to promote as far as possible euthanasia.

As we stated earlier in the paper the great majority of these cases are secondary to pulmonary tuberculosis and our therapeutic measures are handicapped by the fact that the pulmonary infection is usually progressive. The climatic treatment of these cases with suitable local treatment often seems to be the one which we would most sincerely recommend. However, climates that are beneficial to tubercular cases of the pulmonary type are often not suited for those possessing laryngeal features, since a climate which may benefit the former, as many of the health resorts of the southwest have been found to do, oftentimes aggravate the laryngeal ulceration through inhalation of an alkaline dust; so in recommending a change of climate to those individuals who show both laryngeal and pulmonary infection, we should select or recommend an atmosphere which, in addition to certain well-known health-giving characteristics, is free from an irritating dust. However, when all has been said there is perhaps no special disease in the range of medicine in which the medical practitioner must so frequently confess the inadequacy of his therapeutic agents as in tuberculosis of the larynx.

SURGICAL TREATMENT OF CIRRHOSIS OF THE LIVER.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

A WOMAN aged thirty-four, wife of a saloonkeeper, consulted me in September, 1898. She complained of shortness of breath, distended abdomen and swollen legs. She had never been pregnant although married ten years. Her menstruation had always been regular in frequency and uniform in quantity until about six months before when it gradually began to disappear. About that time she had a severe attack of gastroduodenal catarrh characterized by a great deal of vomiting of slime, much pain in the epigastrium, a moderate degree of jaundice and persistent constipation. She said that her complexion had never been right in brightness or freshness since that attack.

About two months before I saw her she found her abdomen so much distended and her general health so poor that she was obliged to call a physician to tap her. Upward of twelve quarts of straw-colored fluid was withdrawn and she was greatly relieved. Gradually, however, the abdomen refilled, her limbs became edematous and she was again distressed for breath after very moderate exertion. That was her condition when she consulted me.

Physical examination of her heart and respiratory organs revealed no organic defects. Her urine while deeply stained with bile was free from albumin and sugar. I tapped her and drew off fourteen quarts of dark bile-stained fluid. Then I found the lower margin of her liver nodular where it could be felt projecting beneath the costal cartilage. It was not difficult to make a diagnosis of cirrhosis of the liver with consequent effusion into the peritoneal cavity. She was greatly improved in all her distressful symptoms by the tapping. I hoped she would with change of food and drink, with pure air and the daily use of sprudel salts recover and no longer need my services, but I was disappointed for she soon filled up again and was much weaker than before.

I now advised a different operation, namely, an attempt to secure a new outlet for the imprisoned portal circulation to the general venous system. I had heard that nature sometimes made a new portal vein, when from certain causes the orginal one became insufficient. In some old plates published in Paris many years ago under the title of "vice de conformation de la foie," I found a representation of an abnormal portal vein which had grown out of an overdistended omental vein inosculating with veins about the umbilicus and continuing to the mammary veins by which route its contents reached the vena cava ascendeus. This gave me confidence that it was reasonable to undertake the operation which had been proposed by several writers on surgery for the relief of an obstructed portal circulation.

My patient was made acquainted with all the facts bearing on this subject that I could marshal and readily gave her consent to the operation. She was given chloroform by DOCTOR DAYTON PARKER. I opened her abdomen in the median line from an inch below the ensiform cartilage downward to the umbilicus. A quantity of ascitic fluid ran out. My finger in the wound felt the cirrhosed margin of the liver. I dragged the omentum to the wound and then separated the peritoneum from the transversalis fascia on the left of the abdominal wound making a pocket about two inches deep. On the opposite or right side I scraped the peritoneum on its inner surface over an area of about two by three inches. Now the omentum was brought out through the open abdomen so that some of it was interposed between the subjacent intestines and the scraped peritoneum, while a part of its free border was buried in the pocket on the left of the abdominal opening, which was closed with interrupted sutures made to include the omentum and secure its retention in the pocket and its contact with the scraped area of the peritoneum.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

Progress was uneventful in this case until the tenth day when so much fluid had reaccumulated in the abdomen that it had to be drawn off with a trocar, but patient did not need a second tapping. Healing was sound and satisfactory in every way.

This woman died last February of chronic gastroduodenal catarrh. She was addicted to the excessive use of beer, but there was at no time any return of the ascites nor did her menses reappear. There was no apparent great distention of the veins leading from the umbilicus to the mammary veins or the epigastric veins.

I was denied an autopsy and consequently could not define the collateral circulation that developed after my operation. However, I am satisfied that a good and efficient anastomosis grew between the veins of the omentum and the veins of the subperitoneal space, otherwise my patient would not have lived with a palpable cirrhosis of the liver for more than two years after the operation without any appearance of abdominal ascites.

The encouragement received in this case led me to operate on another patient, a man aged forty-two years, who had been a long time a drinker of too much beer. He suffered for several years gagging and vomiting every morning and the while could not retain his breakfast until he had taken a drink of whiskey. He had been tapped twice when I was consulted, His tawny jaundiced complexion and clay-colored stools suggested an irremediable lesion of his liver. I explained to him and his family that it was probable that the cells of his liver had been so long compressed by the product of inflammation that it was doubtful if an operation would do any good. But his condition was hopeless if left solely to treatment with drugs, and an operation, if made cautiously, could not make his condition materially worse. I felt justified in advising him to submit to surgical treatment for the purpose of making a new route for the blood of the portal vein and thereby prolong his life.

I opened his abdomen between the ensiform cartilage and the umbilicus, when quantities of ascitic fluid gushed out. My finger felt his liver enlarged. The omentum looked very pale although its vessels were large and the spleen was twice the normal size. On the left side of the abdominal incision I separated the peritoneum from the transversalis fascia opening freely the subperitoneal space. On the right side of the wound I reached into the abdomen and scraped the peritoneum as far back toward the right as I could reach, using the back of a bistoury as a scraper, while the anterior wall of the abdomen was lifted away from the subjacent viscera. Then the omentum was dragged through the wound and a part of its free border was inserted into the pocket made in the space between the peritoneum and the transversalis fascia and the abdominal wound was closed with interrupted sutures which embraced the pocketed omentum and secured its contact with the peritoneum.

The sutures were removed on the tenth day. The abdominal wound was healed soundly and his general condition was very good considering the impaired function of the hepatic cells. At no time during the convalescence was there any temperatere above 100° Fahrenheit, but he was slow regaining his mental equilibrium. He was stupid and indifferent in many ways, probably the result of portal toxemia.

For three months after this operation this patient improved slowly. He had no reoccurrence of ascites and passed unusual quantities of urine which, however, was not saccharine. His bowels were torpid and the stools lacked the color of normal feces. He died of cirrhosis of the liver that had no ascites during the three months that he lived after the operation. I think his life was prolonged and made more comfortable by surgery.

Another patient was a woman aged thirty years and unmarried, a bookkeeper by occupation. After a long period of poor health characterized by disturbance of stomach and bowels and short attacks of moderate jaundice, she found her abdomen gradually becoming dropsical. This was more than a year and a half ago. I could find no disease of heart or kidneys to cause the accumulation of fluid in her abdomen. A diagnosis of hepatic cirrhosis was made by exclusion and the presence of ascites, tawny skin, constipated bowels, and occasional clay-colored stools with a history of vomiting and pain in the right side for several months.

Patient was subjected to chloroform anesthesia at the Detroit Emergency Hospital. I made the operation before described on her, taking great pains in pocketing the omentum to secure its anastomosis with the subperitoneal plexus of veins.

Recovery in this case was uneventful as far as the operation was concerned, but while she still lives and works and is fairly happy she is not perfectly well. She has had no reaccumulation of fluid in her abdomen, but she has suffered many times from very distressing attacks of tympany which have been relieved by drinking cinnamon tea. Her urine is now often loaded by bile and she has periods of anorexia with bilious vomiting and constipation. There are no alarming symptoms. I believe the surgical work in her case has saved her life. While she is not yet altogether well I think there are enough sound cells left in her liver, and sufficiently large anastomosis has developed between her omentum and subperitoneal plexus of veins to enable her to live the normal limit of her life.

Great impetus has been given to the surgical treatment of cirrhosis of the liver by the successful case described by DOCTOR JAMES T. JELKS, of Hot Springs, Arkansas, in a paper published in the *New York Medical Record* last March. The diagnosis was in that instance made clear by the copious effusion into the peritoneum and the failure to relieve it by treatment with drugs. DOCTOR JELKS gives the mortality of the operation as compiled from all available sources at twenty-one per cent. All the cases which have recovered from the operation have not been cured, but forty-three per cent. of them are reported well and sound.

This is sufficient to put the operation on a good sound basis, and we may reasonably hope to cure about one-half of all cases of hepatic dropsy. Those cases will die sooner or later, even if they are operated upon, which have already sustained very great destruction of the hepatic cells. We cannot now expect the operation to do more than to relieve the distressful symptoms resulting from the recurring ascites, but it is reasonable to hope that an early relief of portal stasis, by making a channel around the liver instead of through it for the portal blood, will remove a constant source of irritation from the liver and favor absorption and elimination of morbid products and deposits.

There need be no further hesitation as regards the therapeutic value of this operation in the hopeless cases of hepatic cirrhosis accompanied by abdominal dropsy. It is sure to palliate and improve the condition of any case of abdominal dropsy that is due to hepatic cirrhosis. I think the operation should seek to secure anastomosis between the omental veins and the great venous plexus of the retroperitoneum. The pocket operation which I have practiced accomplishes this result better than any other operation because it makes sure of extraperitoneal inosculations and thus secures the most ample and yielding channel to the vena cava. I would practice this operation in all cases of hepatic cirrhosis that are complicated by abdominal dropsy and where the patient has vitality enough left to endure such an operation.

RECENT EXPERIENCE WITH SMALLPOX.*

BY THEODORE SCHMALZRIEDT, M. D., WOODMERE, MICHIGAN.

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[CONTINUED FROM PAGE 224.]

IN the whole number of cases treated there were five which varied so much from the others as to become of special interest. The first, that of a young man eighteen years of age, who had been for seven years afflicted with rheumatic arthritis, shows a quickly fatal form of variola pustulosa hemorrhagica. I found him with a temperature of 105°, a very rapid pulse, severe frontal headache, and shooting pains in the joints. I at first thought it an acute exacerbation of his rheumatic condition as he had frequently been similarly attacked during the two years I had known him. I prescribed accordingly and the following morning found his temperature and pulse normal and the headache and shooting pains had disappeared. The only thing he complained of was an intense itching all over his body. This led to an examination which revealed a very dark and faintly visible rash. By evening the skin was thickly studded with minute pimply elevations which felt like shot under the skin. A diagnosis of variola was then plain. These pimples increased on the following day into good-sized papules. The distinctive feature at this stage was the very dark color of the skin over the papules—he was so profusely covered that there was no "between the papules." He also had a severe epistaxis. On the fourth day vesicle formation began which increased in size on the fifth, and became pustular on the sixth day. Maturation of the features was complete. Secondary fever appeared on this day, also a severe diarrhea and hematemesis. He relapsed into a comatose condition on the seventh day. Feces and urine were passed involuntarily. He was unable to swallow even liquids. Conjunctival hemorrhages were noticed on the eighth day. The pustules assumed a reddish brown color denoting that hemorrhage had taken place into them. Coma was complete and he died on the morning of the ninth day. This case illustrates a type of the disease in which we are powerless to do anything for the patient. His years of illness with rheumatism undoubtedly produced a weakened condition of the walls of the blood-vessels, thus accounting for the hemorrhages. On opening a pustule, there exuded a thick, creamy pus streaked with blood.

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* Read before the DETROIT MEDICAL SOCIETY.

The second interesting case was that of a woman, twenty-two years of age, and pregnant eight months. She had been exposed to a case of unrecognized variola discreta during the papular, vesicular, and one day of the pustular stage. She was vaccinated on the seventh day and revaccinated on the thirteenth day after exposure, both vaccinations becoming effective on the sixteenth and twenty-first days. She took sick on the nineteenth day after exposure, with a temperature of 104° Fahrenheit, which in a few hours rose to 106° Fahrenheit. The pulse was 180 per minute and above. There was incessant vomiting. On the following day a profuse rash, like a scarlet fever rash, made its appearance. In spite of treatment the temperature remained above 103° Fahrenheit and pulse above 140. Vomiting ceased somewhat by the third day and diarrhea took its place. On the fourth day she miscarried, the child being born before I reached the bedside. On the fifth day vesicles formed which became slightly pustular on the seventh. These began to dry up on the ninth, so that by the eleventh and twelfth days the crusts were rapidly coming off, showing the mitigating influence of the vaccinations on the disease. On the fourth day after miscarriage her temperature again rose, and as there was no uterine pain, no vomiting, no chill, no sweating, no odor to the lochia, I presumed this to be secondary fever of smallpox, it being then the eighth day of the disease. Two days later symptoms of septicemia were pronounced and I curetted, getting away several pieces of placental tissue. The symptoms improved for twenty-four hours when they again became serious. I again curetted but was unable to get very much tissue, though I could feel that there was considerable of it present. The following day I made the autopsy, under suitable precautions, and found considerable placental tissue tightly adherent to the uterine fundus. So firmly adherent was it, that I found it an impossibility to loosen it with the scalpel, which explained why my curette had not brought it away. Though this woman died of puerperal septicemia, the attack of varioloid was indirectly the cause of death.

In this same house occurred another interesting case. The husband of the aforesaid patient had been directly and thoroughly exposed to this same unrecognized case of smallpox. He had waited on him and had assisted me in taking him to the ambulance for removal to the contagious disease hospital. He was vaccinated on the same day as was his wife. His vaccination became effective two days earlier than did hers. On the nineteenth day after exposure, which was the same day that his wife took sick, he showed all the initial symptoms of variola—high temperature, chilly feelings, rapid pulse, intense frontal headache, backache, and extreme weakness. These symptoms would moderate for twenty-four hours and then reappear with the same intensity. This continued for an entire week and then gradually ceased. There was no rash nor any other indication of varioloid. Under different conditions, his attack would ordinarily have been diagnosed one of malarial fever, but the attending circumstances of his thorough and prolonged exposure to a case of smallpox, of his wife's attack of varioloid due to exposure to the same person, the slow "taking" of the vaccinations—whereas two other members of the family who were exposed equally as much, but in whom vaccination became speedily effective, entirely escaped the disease—will suffice to brand this as a genuine case of variola sine eruptione.

A further interesting case of varioloid was that of a woman aged thirty-eight years. She had been nursing her son who had variola discreta. She was vaccinated on the third day of exposure and it became effective within a week. Sixteen days after the first exposure and thirteen days after vaccination, she contracted varioloid. The initial symptoms were severe, as was later on the secondary fever, which ranged above 102° Fahrenheit for three days. The eruption was profuse on the face, body and limbs, and pustulation was severe. On her back there were spaces covering a total of about one hundred and twenty square inches of surface on which the eruption assumed the confluent form. The attack lasted forty days and pitting is pronounced. The one successful vaccination without doubt saved her a severe attack of confluent variola. The four remaining children of this family had varioloid of a mild type. A second vaccination might have visibly moderated this attack. But the fact that the first vaccination was completely successful and that eighteen days elapsed before she became sick would scarcely have induced one to revaccinate in this case.

The last case I wish to mention was that of a woman twenty-six years of age and six months pregnant. This was a typical case of variola confluens. The disease lasted forty-seven days and was certainly one of the most interesting pictures which presents itself to the practitioner of medicine. The initial temperature was high and the accompanying symptoms severe. The eruption which appeared on the second day, so thoroughly covered her from head to foot as to leave not even space large enough to place the tip of the finger anywhere. Vesicles and pustules formed in regular succession and maturation was severe. During the height of the pustular stages she presented a frightful appearance. The odor was terrific. The mucous membrane of nostrils, mouth, pharynx, and larynx was so completely covered as to make deglution impossible and respiration difficult. The vocal cords undoubtedly were affected as she soon lost her voice and was unable to utter sounds for an entire month. The secondary fever ranged high and long. She was very delirious, getting out of bed several times in spite of restraint, and thereby contracting a severe attack of lobar pneumonia. After the delirium ceased she remained in deep coma for five days. She freely scratched and picked off the crusts, thus producing large suppurating surfaces. Singular to say, she did not miscarry but has since given birth to a full term child which is not marked in the least. The pneumonia ran its regular course and terminated in resolution with rusty sputa. There were complications of purulent conjunctivitis and otitis. The mucous membrane of the respiratory and food passages was in an ulcerous condition with a constant severe burning pain. The only nourishment she was able to take for several weeks was ice-cream, which proved both soothing to the mucous membrane and a nourishing food. Antiseptic and soothing applications had to be extensively used. Brandy and strychnin in large doses maintained life, while good competent nursing placed her in a condition favorable to recovery. I attribute her recovery, aside from her strong constitution and some splendid nursing, to heroic stimulation. Pitting and scarring in this case was, of course, very marked.

We read of the sequelæ of smallpox as being deafness, blindness, necrosis of bone, tuberculosis, et cetera. One of my cases of variola discreta was followed by a plentiful eruption of boils which yielded speedily to treatment with calcium sulphid. Another patient had a severe attack of eczema which yielded to the usual application for this affection. The last mentioned patient with variola confluens with complicating pneumonia is still expectorating bloody sputa, while her general health is much impaired. Her financial condition and domestic relations do not permit her to be under treatment, and I shall be not all surprised to see the case develop into one of tuberculosis in the near future.

To put it in a nutshell, the treatment of smallpox can be said to be good nursing and the treatment of complications. Mild cases will recover without treatment of any kind. Proper hygienic surroundings, free elimination from the excretory organs, which means internal asepsis, soothing and cleansing applications to the skin, which means external asepsis, a fluid or semisolid diet as indicated, and stimulation *pro re nata*, is the only treatment required in a large majority of the uncomplicated cases. Of remedies which I have tried I will first mention calcium sulphid, as I have seen the virtues of this remedy in smallpox highly extolled in several medical journals. The advice was to give to saturation and it would greatly ameliorate or entirely abort the suppurating stage. Well, I gave it to saturation, until the breath smelled of calcium sulphid and the patient tasted calcium sulphid; but by the utmost stretch of imagination, I have not been able to accord it any virtue in this disease. Nuclein and protonuclein I have given in several cases, in ever-increasing doses, but have not observed any beneficial effects from their administration.

If the bowels are not as active as may be desired, calomel followed by effervescent magnesium sulphate will make them so. If secretion in the kidneys becomes stagnant, liquor ammonii acetatis with diluent drinks, and, if necessary, infusum digitalis will have the desired effect. An enteritis in one case yielded promptly to a preliminary cleansing by magnesium sulphate which was followed by large doses of sulphocarbolate of zinc and small doses of Dover's powders. If the state of the intestinal canal requires an antiseptic, I use one, further than this I see no indication in this disease for the internal administration of antiseptics. That any specific internal medication is of curative value in a self-limited constitutional disease like smallpox remains as yet unproven. It has been my experience, that to place the patient by proper feeding and stimulation in the most favorable condition to resist the action of the toxins and to promptly and continually eliminate, by the bowels, kidneys and skin, the absorbed toxins, is the *sine qua non* of the successful treatment of smallpox. Of stimulants, strychnin is the remedy *par excellence*. My most serious case of confluent smallpox, I tided over its critical stages by heroic doses of this drug, the patient at one time receiving two grains of strychnin sulphate in twenty-four hours, for several days continuously. Such heroic doses will certainly bear assiduous watching; but I was giving the remedy to get an effect and if that effect had not been secured my patient would have died, which circumstance justified the dose. There is no more danger of strychnin poisoning in cases requiring such doses (always presuming that its effect is being watched) than there is danger of alcoholic intoxication by the large quantities sometimes given in typhoid fever. In the treatment of the eruption antiseptics play an important part. The skin should be frequently bathed with hot water, to which a little carbolic acid, or, as I prefer, boric acid has been added, after which the application of camphorated or mildly carbolated oil will prove soothing to the itching, burning and soreness. During the period of crustation, these have additional value in that they prevent the promiscuous dissemination of the dried crusts. This frequent and constantly repeated cleansing of the skin I regard as the most important duty of the nurse in this disease. By removing the adherent crusts and impurities, which in smallpox are legion, we open the pores to active excretion, thereby eliminating the toxins by the same avenue through which they are produced—the skin. The beneficial effects of this to the patient are apparent. An ounce of prevention here is worth a pound of cure. To prevent absorption of toxic material—of pus—means less poison to be eliminated, less secondary fever, a healthier circulation, better healing, better appetite, an increased resistance to the inroads of the disease upon constitutional vitality, and at once, a brighter and more cheerful patient. For the ulcerous condition of the mucous membrane of the mouth, et cetera, borolyptol and listerine proved most serviceable. Suppurative conjunctivitis yielded quickly to the use of boric acid lotion and yellow oxide of mercury ointment. In the complicating attack of pneumonia, the carbonate of ammonia and stimulants acted with precision.

During the height of the initial and secondary fevers, a liquid diet only is permissible, otherwise a soft diet. During the period of convalescence—unless complications counterindicate—I place no restriction upon the dietary.

An important question in treating this disease is how to prevent pitting. Pitting is due to the destruction of the deeper layers of the skin by the pus contained in the pustule, which destruction is later on repaired by cicatricial tissue. How any application external to the pustule can prevent this deep-lying destruction of tissue is out of the usual path of reasoning. It is claimed that coagulation of the contents of the papule by the application to it of iodin will prevent pitting; but the fact remains that those cases which do not reach the stage of pustulation (mild cases of varioloid, for instance, or of varicella) do not pit at all. Pitting is proportionate to the amount of pustulation. So it is the pustule and not the papule to which we must give our attention. I have opened a number of pustules and cleansed them with peroxid of hydrogen. Pitting ensued just the same. I tried deep penetration by the solid nitrate of silver, but do not care to try it again, neither does the patient. As to whether protection of the features from sunlight will accomplish our object, I have not yet arrived at any positive conclusion. The application of lint or gauze soaked in cold water, to which a pleasant antiseptic (like listerine) has been added, can certainly do no harm, is grateful to the patient and protects the features from sunlight. This has seemed to me to mitigate the pitting, but not to prevent it.

Quite recently—and too late to make practical use of the idea—I saw an article by a physician of Chicago, and also one by two European physicians on the use of red light—or negative phototherapy to prevent pitting of smallpox. The sunlight which enters the room is filtered through red curtains; the idea being to subject the patient to the influence of the innocent red rays of the solar spectrum, and to protect him from the irritating ultraviolet or blue rays. The claim made for the method is, that a reduction of the intensity of the existing inflammation by the use of red and the exclusion of ultraviolet rays will cause the gradual disappearance of the eruption before it reaches maturity, which means to prevent the pustular stage. This is certainly worth a trial, for if pustulation can be prevented smallpox will have been robbed of its greatest terrors, namely, secondary fever, toxemia with its baneful complications and *sequelæ*, and pitting. The first opportunity should result in a thorough *trial* of this new remedial agent.

In conclusion I wish to relate a peculiar experience I had as to my own person. I was successfully vaccinated in infancy. In 1894 I was twice unsuccessfully vaccinated. In 1897 I took advantage of an opportunity which presented itself to witness a case of smallpox, and on this occasion I was again twice unsuccessfully vaccinated. In March of last year, when smallpox first made its appearance in my township, I vaccinated myself, and again in May, when the second set of cases appeared. Neither time did it take. So I thought myself tolerably proof against smallpox. After having daily attended cases of this disease for two months, and especially because of the close contact in which I came with the aforesaid case of variola confluens, the exhalations from this person making presence in the room almost unbearable, and because my examinations, which had to be made with a stethoscope, and the treatment of the case, required me to remain for one-half hour or longer and inhale these poisonous exhalations, I became somewhat uneasy lest this continuous exposure to the disease, together with an enfeebled constitution caused by prolonged strain and overwork of body and mind, should predispose me to an attack of the disease, and so I was again vaccinated by a medical friend of mine and also vaccinated myself on the same day. To my surprise both vaccinations took splendidly and I certainly "felt better." This goes to show what a great risk the physician, treating this disease, runs as to his own person and that one cannot be too careful in looking out for himself while looking after the welfare of his patients. The interesting part to me, aside from my fortunate escape from this disease, is: what caused my system to deteriorate into a condition favorable to an attack of smallpox after six unsuccessful vaccinations within less than six years? I cannot explain it otherwise than that my system had, from the prolonged and continuous exposure to this disease—especially to the case of confluent variola—imbibed sufficient poison or became so saturated with it, as to eventually threaten me with an attack of the disease itself. I should like very much for some one to explain this singular occurrence.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, MAY 8, 1901.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR GEORGE F. BUTLER, of Alma, Michigan, read a paper entitled "Hysteria." (See page 245.)

DOCTOR GOUX: It seems to me that the value of the paper lies in the recitation of the symptoms. There are a great number of symptoms recorded in this paper which, ordinarily, one in making a diagnosis might not think of at all. This is an aid in making a differential diagnosis between hysteria and some of the other diseases which it may so closely simulate. In some cases it is a difficult matter to make a diagnosis of hysteria, unless we have a good understanding of the various symptoms that we can look for to make a diagnosis. We are apt to lose a great deal if we are not cognizant of these facts.

Doctor Parker: I will say that here the disease is hysteria, not manifestations of hysteria. The condition of hysteria is a prolonged and serious disease, and is much more prevalent in the country than in the city. Another strong point in the paper is the importance of isolating the patient from sympathetic friends. The entire success of the treatment depends upon getting the patient away from people who will sympathize with her case. It happens at times that a diagnosis of a case is very hard to make. To make a diagnosis of which we are certain and to get the patients away from the people who will influence them is often a difficult matter.

Doctor Emil Amberg: I should like to take exception to the point in this paper, attributing neurasthenia to an affected spinal cord. Hysteria does not affect the intellectual faculties so much, as a rule, as neurasthenia, and I think neurasthenia is as much an affection of the brain as hysteria is. The practical point with hysteric patients is, that a physician should not tell them there is nothing the matter with them because these are the people who then go to Christian Scientists and naturally may be benefited. I should like to mention two cases in connection with some ear affection. In one the tympanic cavity stood for several days under high pressure, necessitating paracentesis. This patient was very weak, not having taken sufficient nourishment for some time. The symptoms were misleading and alarmed her sister very much. She was an attendant in one of the insane asylums. Taking everything into consideration and after consultation with the doctor of the institution we decided to give a placebo, and the next day she was better. Another case was one of hysteric deafness. I made this diagnosis because, when I put my finger on the ear of the patient without closing the same, she pretended not to hear.

Doctor Sampson (Windsor): I must say of this paper that it is a very nice description of the observations and experiences of men in all ages regarding this disease. It begins and ends with the absolute statement that hysteria is a disease of the cortex of the brain, and in the meantime it gives a history of a series of epidemics of hysteria—the same hysteria. Because some one is stricken in a little town in which there are twenty-five or thirty average healthy young women who are all attacked in the same way, can anybody venture to call this a disease of the brain? This paper contains no evidence that hysteria is a disease. Many years ago a girl (in one of the convents of France) took to mewing like a cat. Before many days had gone by hundreds of girls were mewing. Is that a disease of the brain? The subject of hysteria is an immensely important subject. A wise understanding of it would do the members of the society as much good as anything that could possibly be acquired, but we have not had any light on this subject tonight, that will be of any use to any of us. I am not sure that there is a man or woman on earth who may not before he or she dies give a display of hysteria if the circumstance is sufficient to cause it. The hanging of a man to a lamp-post at an hour's notice is nothing but a hysteric outburst. If this is a disease of the cortex some person should seek the spot and locate it. The spot in pure hysteria has never been located as an organic lesion. I believe that hysteria can simulate any known disease, even though the patient has no knowledge of the symptoms of that disease.

REPORTS OF CASES.

PRACTICE OF EUGENE SMITH, M. D., DETROIT.

TWO INTERESTING CASES OF MASTOID DISEASE, WITH OPERATION.

A MAIDEN, aged twenty-six years, consulted me the middle of September, 1900, suffering from suppurative otitis media of the left ear, and complaining of severe pain over the mastoid and occiput of the same side. There was no edema or redness of the mastoid region, but there was exquisite sensitiveness over the antrum and tip of the mastoid on pressure. There was considerable discharge from the middle ear through a good-sized opening in the drum membrane. Patient complained of "feeling sick," and her temperature varied from normal to 100°. Twenty years ago I treated the patient for an acute abscess of this same ear, and again two years ago. Each time the disease responded to the ordinary treatment, but this attack seemed more severe and rebellious to treatment, and I concluded after three weeks' treatment to open the mastoid. October 10, 1900, I operated at Saint Mary's Hospital, making the usual Schwartze operation with chisels, opening first the antrum, then grooving the mastoid and looking for cells, which I failed to find. The whole mastoid was devoid of pneumatic cells, large or small, except the antrum, and bore marked evidence of osteitis. Some granulations and a suspicion of purulent material were found in the antrum. The day after the operation the temperature dropped to normal and the severe pain and headache disappeared. The condition of the mastoid was one of osteosclerosis.

MRS. S., aged twenty-one years. This patient consulted me November 13, 1900. She has had discharge of left ear frequently since childhood. She now has a very slight discharge from the middle ear through a large opening in the drum membrane, and complains of severe pain in mastoid region and whole side of head. There was no edema or redness, but extreme tenderness over the mastoid, especially over the antrum. Temperature 97° to 99°. About eighteen months ago I had operated upon the right mastoid of this patient for an acute mastoiditis, and as I then found a so-called peanut-shell mastoid, I thought I would have an easy operation in this instance. I momentarily overlooked the probable changes in the bone due to the chronicity of the ear affection. November 15, 1900, in Saint Mary's Hospital, before my class, I opened the mastoid and instead of a peanut-shell mastoid as was the opposite side, I found an eburnated bone without a sign of a pneumatic space. The bone was so hard that while chiseling close to the posterior wall of the meatus I broke through the wall of the sigmoid sinus, exposing a portion of the sinus; it was about one-eighth of an inch distant from the posterior wall of the meatus. As the sinus was not injured, no harm was done, and I proceeded to find the antrum, which I did after about thirty minutes careful work. The antrum was exceedingly small, and situated three-fourths of an inch from the external surface of the bone. There were no evidences of disease of the antrum. The day after the operation the temperature was normal, the pain had disappeared and the patient was sitting up.

These two cases illustrate well the osteosclerotic condition frequently found in chronic suppurative ear troubles and the relief which follows the chiseling of the bone, even when no pus is found in the antrum. These cases also illustrate the absence of redness, swelling and tenderness of the skin covering the mastoid process. Again, they illustrate that in not a few instances our decision to open the mastoid is based almost exclusively upon the pain in the mastoid which has developed during a chronic suppurative disease, together with the slight elevation of temperature. In these operations I was ably assisted by DOCTOR W. R. PARKER.

PRACTICE OF WILLIAM F. METCALF, M. D., DETROIT.

REMOVAL OF UTERUS AND APPENDAGES PER VAGINAM.

IN October, 1899, a woman was referred to me to ascertain why she could not become pregnant. She was thirty-two years of age and had one child about four years old. Her menstruation was regular but painful, her general health fair. Physical examination revealed tenderness to pressure over uterine appendages, which were slightly prolapsed, much scar-tissue in cervix uteri, and hardness in lower segment of uterine body. October 13, 1899, at Harper Hospital, I curetted the uterus, amputated the greater part of the cervix, removing all the scar-tissue and a small intramural fibroid which encroached upon the cervical canal at the inner os. I then made abdominal section and removed approximately half of each ovary because of cystic degeneration. I also made ventral peritoneal attachment of the fundus uteri. Her recovery was satisfactory. She reported a few months later that she was pregnant. October 6, 1900, about 5 A. M., I received a message to come to her home prepared to do any intraabdominal operation. Missing train connections I did not reach her bedside until 6:30 that evening (Saturday). Her temperature was 100°, her pulse 140, her respirations were difficult because of extreme abdominal distension, the tympanites being as great as I have ever seen. Her attending physician said that premonitory signs of labor had presented the previous Sunday, that labor pains began on Tuesday, that the face presented, that he delivered her with forceps on Wednesday, that the flow had been excessive, that tympany had begun within three hours of delivery, that he had been unable to force a movement of the bowels, that vomiting was persistent. I suspected deep laceration with infection. Her physician very properly argued that were the ileus due to infection it would not have presented so soon after delivery. Chloroform was given, and the uterus was found to be torn from its vaginal attachment upon the left side to such extent that my whole hand passed into the abdominal cavity. There was also a rent at the vaginal attachment upon the opposite side large enough to admit the insertion of two fingers. The rents were filled with clots, involution was incomplete, the organ toneless. There was no evidence of sepsis, no adhesions. The clots were cleared away, the parts cleansed with saline and loose packings of iodoform gauze inserted. Saline transfusion was given. Every means was employed to compel a movement of the bowels. All failed. Notwithstanding the use of strychnin and other stimulants and saline transfusion her condition was worse the next morning. I thought the ileus was produced by the drainage of the lochia into the abdominal cavity and the traumation of the sympathetic ganglia surrounding the internal os, and that to remove the lacerated organ might diminish the irritation, because of the greater sensitiveness of nerve terminals. We placed her again upon the table, started saline transfusion and removed the uterus and its appendages per vaginam. Notwithstanding the utmost care I passed my finger through the posterior bladder wall, in separating the organs, because of pressure necrosis. I closed this opening with a purse-string suture and inserted a self-retaining catheter. The patient began to improve at once. The bowels moved, the tympanites gradually diminished, the pulse improved and the vomiting ceased. She retained liquid. nourishment, and when I left her at 9 o'clock Sunday night I thought she would recover. She died suddenly the next morning.

PRACTICE OF JAMES A. MACMILLAN, M. D., DETROIT.

APPENDICITIS, WITH OPERATION.

A MAN, aged twenty-eight years, teamster, was taken with a severe pain near McBurney's point on March 16, 1901. I saw him on Monday, the 18th. His temperature then was 102° and pulse 110. There was tenderness in the region of the appendix, and he could not retain food. I had him removed to Harper Hospital Monday afternoon, and operated Wednesday morning. Just before the operation his temperature was 98° and pulse 72. I found a large amount of extraperitoneal inflammatory exudate, the peripheral niche of the appendix entirely sloughed off, and encapsulated in a fold of the omentum, a large part of the muscular and fibrous coat of the appendix entirely sloughed away, but the peritoneum sufficiently intact to prevent the liberation of numerous concretions which fill the proximal portion of the appendix. There was a large patch of necrosis on the small intestine. The amputated portion was lying in a pus cavity. I report the case on account of the following features: (1) The existence of a condition so grave with comparatively mild symptoms. (2) The large amount of retroperitoneal inflammation. (3) The thin covering of peritoneal membrane persistent after the destruction of the underlying coats of the appendix. (4) The retention of the concretions in the presence of so much distruction of the appendicular tissue.

PRACTICE OF EMIL AMBERG, M. D., DETROIT.

A SMALL PERFORATION OF THE DRUM MEMBRANE CLOSED BY TRICHLOR-ACETIC ACID APPLICATION.

A LAD, fifteen years old, received a blow on the ear. This was followed by pain. The next day, July 29, in the morning, he went swimming. While swimming, he had pain for about five minutes and felt as if drunk. When he came out of the water he felt dizzy and noticed humming noise. Before dinner he had pain again which lasted until he came to my office at about 2 P. M. Twice his ear was syringed at home. Examination: Left ear contained small perforation in upper posterior half, with reddish reflex. A watch, which is normally heard at a distance of about one hundred or one hundred and fifty inches, is heard only at a distance of twelve inches. Treatment: Insufflation of boric acid and aristol powder. After a few days I noticed that the ear was dry, but that a perforation about the size of a pin-head persisted. In order to close up the perforation a concentrated trichlor-acetic acid solution was applied with the necessary precaution. When seen a few days later the perforation had closed up. August 26, the same watch was heard at eight and one-half feet. The history of the case and appearances indicate the traumatic origin of the perforation. The fact that the patient reported quickly for treatment and that maltreatment was prevented, insured success. Furthermore, a single application of trichlor-acetic acid proved equal to the task on account of the smallness of the perforation.

EDITORIAL ARTICLES.

A COURT DECISION ON THE RELATION OF DOCTORS TO PATIENTS.

As a rule doctors need no formal interpretation of the law to hold them to assumed obligations. Patients may usually depend upon the moral sense, inseparable from a worthy member of the profession, as a sufficient guaranty of fair dealing. Experience, however, teaches the public the necessity of the law in respect to certain individuals, and it is owing to those derelicts that odium is brought upon the whole profession. Such a one was a San Francisco surgeon, who, as the *Christian Advocate* relates, decided that a patient whom he was called to attend must submit to an operation. Her violent screaming angered him and he said "if she did not quit he would quit." Despite her suffering and the request of the husband to remain he left. It was an hour before another surgeon could be obtained.

The husband and wife brought suit against him in the Superior Court and were allowed a verdict of two thousand dollars. The doctor appealed the case but the Supreme Court sustained the verdict and laid down the following opinion: "A physician may choose whether or not he will give his services to a case; the law protects him in refusing any case, but having accepted the employment and begun the treatment he must devote to the patient his best skill and attention, and cannot legally abandon the case except under one of two conditions: If the employer wishes to terminate the contract he can do it at once and the physician has no redress; but if the physician wishes to terminate it, it can be done only after due notice and an ample opportunity afforded to secure the presence of other medical attendants."

CRYOSCOPY.

CRYOSCOPY is one of the advance methods of urinalysis. It consists in determining the molecular constitution of urine by finding its freezing-point. Its value rests upon Raoult's law, which is that the freezing-point of a solution is proportional to the number of molecules dissolved in the unit of volume of the liquid. The number of molecules of dissolved material is taken to represent the value of any urine as an excrementitious product. Of two urines, then, the one whose freezing-point is lower will have greater excretory value.

This means of diagnosis, for which we are indebted to PROFESSOR KORANYI, of Buda-Pesth, has other practical applications, brought to our notice by WALSH, in "International Clinics." The eminent discoverer has shown that in the urine of cardiac cases certain changes take place which suggest approaching circulatory failure.

The number of molecules dissolved in the urine indicates to an extent the permeability of the kidney. The lowering of the freezing point of the urine in renal cases prognosticates good. Its approach to that of water indicates the retention of toxic material in the blood. However, as both the blood and the condition of the kidneys affect the character of the urine cryoscopy is expected to show up new relations between these two fluids.

ANNOTATIONS.

SYPHILIS IN PRIVATE AND IN DISPENSARY PRACTICE.

UNDER the title of "Syphilis in the Well-to-do," McDONALD gives, in the *Medical Record*, a pithy contrast between syphilis in the poor and in the well-to-do. This disease he is convinced, when it occurs in private practice, is not only, in the average case, a mild affection, but subjects its victims to less pain, mutilation and loss of time than many a trivial complaint. In a series of one hundred and fifty cases in private practice, of which ninety-seven per cent. were acquired, sixty-five per cent. showed only trivial lesions that left no trace behind, six per cent. suffered severely from laryngitis, alopecia and the like but recovered completely, and twenty per cent. suffered from gummata, which left scars, but healed readily and satisfactorily. In comparison with these the author presents one hundred and fifty consecutive cases, occurring in the dermatologic clinic of the New Haven Free Dispensary during about the same period. Of these one hundred and fortv were acquired. Of the acquired cases thirty-three per cent. had mild transitory lesions, fifty-one per cent. had destructive lesions, and ten other cases of paralysis, iritis, onychia and periostitis were bad. The author regards the seed, the soil, and the environment all as operating to cause the great difference in the two classes of cases. *Verbum sat sapienti.*

GAYLORD'S CANCER PROTOZOON.

ANOTHER microorganism of the animal variety, a protozoon, has been announced and published widely as the cause of cancer. The alleged discoverer of this germ is DOCTOR HARVEY R. GAYLORD, Director of the New York State Pathological Laboratory of the University of Buffalo, His publication appeared in the May number of the *American Journal of the Medical Sciences.* The author has not succeeded in making a very clear presentation of the matter, which will militate greatly against a ready acceptance of his findings. The parasites are described as small spherical bodies closely resembling fat, but not responding to tests for fat. By incubating hanging-drop preparations of fresh scrapings from cancer these bodies, according to the writer's account, grow in size and finally become granulated, and, if kept upon a warm stage, ultimately throw out pseudopodia, develop a nucleus, and end by turning into a sac containing the spores of the organism. It is stated further that "all the organs, including the blood taken from all regions of all cases dying of cancer, including sarcoma and epithelioma, contain large numbers of the organisms." The observation was made also that in all cases of carcinoma and sarcoma that he examined in which cachexia was well marked the organisms, especially the younger forms, could be detected in the peripheral blood. With such blood it is asserted that animals may be infected and in their peripheral blood the younger forms of the organism may likewise be found.

THE PHYSIOLOGIC EFFECTS OF CHLORETONE.

CHLORETONE, a derivative of chloroform and acetone, was introduced into this country several years ago by PROFESSOR ABEL, of Johns Hopkins Medical School, who used it in physiologic experimentation upon animals. Combining as it does slightly anesthetic with marked narcotic properties animals may be kept quiet for a remarkably long time. Its transference to human therapeutics has been rapid and quite general. It is less irritating than chloral hydrate and has been supposed to be also much safer, but recently attention has been called to its physiologic effects. The *American Journal of Insanity* gives a word of warning as to its use as a hypnotic and quotes the following conclusions by DOCTOR E. IMPENS: In warm-blooded animals chloretone is two and one-half times more toxic than hydrate of chloral. A medium dose of chloretone reduces the total volume of air inspired per minute seventy per cent., the volume of individual inspirations sixty per cent., the frequency forty per cent., thereby considerably diminishing the pulmonary aeration. It produces a fall in the blood-pressure of forty-three per cent. In efficacious doses its paralyzing effect upon the heart equals that of chloral hydrate. Chloretone narcosis is accompanied by lowering of the temperature to below 94.1° Fahrenheit in the rabbit, in the smallest effectual dose. It restricts the combustion of oxygen more than fifty per cent. and produces a marasmic condition in animals that persists a long time after waking. For these reasons it states that chloretone is a much more dangerous narcotic than chloral hydrate.

MEDICAL NEWS.

DETROIT'S NEW HEALTH OFFICER.

DOCTOR GUY L. KIEFER has been appointed health officer of Detroit, his incumbency to date from July 1, 1901. The doctor is a native of the City of the Straits, where he made his début in the drama of life in 1867. He is a graduate of the Detroit High School and obtained the degrees of A. B., A. M. and M. D., at the University of Michigan, the latter in 1891. After pursuing postgraduate studies in Berlin and Vienna he began the practice of medicine in the city of his birth. He has served a term as city physician, and at present enjoys a connection with the Detroit College of Medicine and Harper Hospital Polyclinic. For the sixteen subordinate positions at his disposal he has already been besieged by over six hundred applicants.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

Mr. John D. Rockefeller has made a gift of $200,000 to found an institute for medical research, which shall bear his name. The trustees of the institution, which was incorporated June 13, at Albany, are as follows: Doctor William H. Welch, of Johns Hopkins University; Doctor T. Mitchell Prudden, of Columbia College; Doctor L. Emmet Holt, of Columbia College; Doctor C. A. Herter, of New York University and Bellevue Medical College; Doctor Theobald Smith, of Harvard; Doctor H. M. Biggs, of the New York City Board of Health, and Doctor Simon Flexner, of the University of Pennsylvania. The purpose of the corporation is to facilitate scientific investigation in medical and surgical channels, especially in the direction of prevention and treatment. Instead of immediately erecting a laboratory to pursue this work, however, the board intends to utilize the armamentaria of the medical colleges in New York city until the development of the enterprise necessitates more commodious quarters.

THE JOHNS HOPKINS PRESIDENCY.

Doctor Ira Remsen, who has been professor of chemistry in Johns Hopkins University since the founding of that institution, has recently been elevated to its presidency vice Doctor Daniel C. Gilman, who determined to retire. Doctor Remsen was born in New York in 1846, and graduated from the College of the City of New York in 1865. He is an M. D. from the College of Physicians and Surgeons of his native city; a Ph. D. from the University of Göttingen; and an LL. D. from both Columbia and Princeton. In 1876 the doctor was called to the chair of chemistry in Johns Hopkins University, whereupon he resigned a similar professorship at Williams College, which he filled during the four years immediately preceding. He will assume the duties of the position at the advent of the next collegiate year, in September. He had been associated with Doctor Gilman for twenty-five years in developing the university, and often served in the capacity of acting president during the absence of the chief executive. He is fifty-five years of age.

THE NATIONAL MEDICAL MEETING.

The fifty-second annual meeting of the American Medical Association, which convened at Saint Paul on the 4th instant enjoyed the attendance of 1806 members. The sections were likewise well represented, some of them attracting gatherings of seven hundred at some of their sessions. The report of the committee on reorganization was adopted. This action relegates the legislative affairs of the association to a house of delegates that is limited to one hundred and fifty, and in which, under the present apportionment of one for five hundred members or fraction thereof, the Michigan State Medical Society is entitled to a representation of only two. It behooves the organized medical fraternity in this state to bestir itself in the direction of increasing its ranks and thereby insuring the society a greater degree of influence in the conduct of the national body. Under the new régime the general meeting will not be held after the first day and consequently more time will be allowed for section work. The composition of the association will embrace delegates, permanent members, members by invitation, honorary members, and associate members. The next meeting is to be held at Saratoga Springs, New York, in 1902, and the following officers will render service in the meantime: President, John A. Wyeth, New York; first vicepresident, Alonzo Garcelon, Maine; second vicepresident, Alexander J. Stone, Minnesota; third vicepresident, August F. Jonas, Nebraska; fourth vicepresident, John R. Dibrell, Arkansas; secretary, George H. Simmons, Illinois; treasurer, Henry P. Newman, Illinois; librarian, George W. Webster, Illinois; chairman committee of arrangements, G. F. Comstock, Saratoga Springs.

MORE DISCIPLES OF AESCULAPIUS.

THE fifty-seventh annual commencement exercises of the University of Michigan were held on Thursday, June 20, 1901. The address was delivered by Albert Bushnell Hart, Ph. D., after which the conferring of degrees occurred, the following named candidates receiving the degree of Doctor of Medicine: Frank Paul Anzinger, Ulysses Grant Auer, Frank Edward Baker, Rush Banks, Alfred Castle Bartholomew, George Bowman, Harry Renick Brown, Cassie LaVerna Carvin, William Sabin Chase, Guy Clifton Conkle, Elvia Clair Derickson, Frank C. Diver, Charles Wallis Edmunds, George Edwards Fay, Gertrude Felker, Nathaniel Hall Fuller, Roy Henry Garm, Clarence Samuel Gorsline, Charles Courtney Grieve, Christian Frederick Grimmer, James Hampton Hays, Augustus Holm, Herbert Bradford Horton, Charles Samuel Hosmer, Mayburn Howard, Tomo Inouye, Gardner Charles Johnson, Demeter Kalinoff, James Henry Kelsey, William Thomas King, Willis Joseph Kirkbride, George Milton Kline, Ralph Frederick Koons, Harry Bohumil Kyselka, George Samuel Laird, George Henry Lamley, Frederick Jenison Larned, Simon Levin, Ira Dean Loree, Albert Lynch, Marshall Bidwell McCausland, Joshua George Ross Manwaring, Adelbert Wesley Martin, Emma Josephine Mitchell, William Horace Morley, Thomas Alvin Neal, Albert Noordewier, Guy Lincoln Noyes, Herbert Smith Olney, Walter Thomas Parker, Flora May Phelps, William Oscar Pou, Fred John Pratt, Jr., Herbet Matteson Rich, John W. Rigterink, Earl Adam Rogers, Russell Sturgis Rowland, George Harris Searcy, Francis Frederic Shilling, Jacob Harrison Shuford, Arthur Augustus Spoor, Olivia Silas Steiner, Willard John Stone, John William Trask, Fred Milton Tryon, Herbert Harold Waite, Frederick Rice Waldron, Luther Wall, Clarence Banjay Wasson, Charles Franklin Watkins, Roy Francis Wiest, Allan Marshall Wilkinson, Arlo Ray Williams, Thomas Zelinsky, Theodore Zbinden.

MINOR INTELLIGENCE.

DOCTOR WILLIAM H. DEWITT, of 61 Auburndale Place, Cincinnati, Ohio, is endeavoring to establish the theory that an inherited tendency or predisposition to appendicitis exists, and has contributed a paper to the *Cincinnati Lancet-Clinic* (June 8) to prove his claim. The doctor will be obliged to physicians who enquire into the history (family) of cases met in practice and report to him.

THE M. J. Breitenbach Company, 53 Warren street, New York city, have extended an invitation to all members of the medical profession to make their offices a business home when in the metropolis.

DOCTOR THEODORE R. MACCLURE, of Lansing, Michigan, a current-year graduate of the Detroit College of Medicine, has recently been appointed chief house physician and surgeon at Harper Hospital. Other appointments to the staff of this institution are the following newly-made physicians: William F. Acker, of Monroe; George W. Brooks, of Detroit; Julius C. Clippert, of Detroit; William R. Hanes, of Blind River, Ontario; Archibald R. McCracken, of Birmingham, and Arthur J. Wilkinson, of Alpena.

DOCTOR VICTOR C. VAUGHAN was elected president of the American Academy of Medicine at its recent annual meeting in Saint Paul. Other officers of the association are as follows: First vicepresident, Doctor James L. Taylor, of Wheelersburg, Ohio; second vicepresident, Doctor W. A. N. Dorland, of Philadelphia; third vicepresident, Doctor H. P. Ritchie, of Saint Paul; fourth vice-president, Doctor H. Bert Ellis, of Los Angeles, California; secretary and treasurer, Doctor Charles McIntyre, of Easton, Pennsylvania; assistant secretary, Doctor A. R. Craig, of Columbia, Pennsylvania.

AT the recent annual meeting of the Ann Arbor Medical Club, Doctor Frederick G. Novy delivered an interesting and instructive address on "The Bubonic Plague," which will be published in an early issue of The Physician and Surgeon. This society will continue its meetings during the summer, and transient members of the profession are cordially invited to attend, the date being the second Wednesday evening of each month. The following officers have been elected for the ensuing year: President, Doctor Robert C. Bourland; vicepresident, Doctor Guy L. Noyes; secretary-treasurer, Doctor John William Keating.

THE annual meeting of the Association of American Medical Colleges was held at Saint Paul June 3. Seventy-five medical colleges comprise the membership of this organization. After transacting business calculated to promote higher medical education in this country the following officers were elected: President Doctor Victor C. Vaughan, of Ann Arbor; first vicepresident, Doctor William M. Rodman, of Philadelphia; second vicepresident, Doctor H. Bert Ellis, of Los Angeles; secretary, Doctor Bayard Holmes, of Chicago; judicial council, Doctor Thomas Hawkins, of Denver, Doctor E. C. Dudley, of Chicago, Doctor W. J. Means, of Columbus, Ohio.

THE Washtenaw County Medical Society convened in Ypsilanti on the 24th ultimo. The annual address was delivered by retiring President G. Carl Huber, who chose for his subject: "Recent Observations on the Origin and Development of the Human Placenta." Doctor William F. Breakey read a paper on "Epithelioma following Lupus." These contributions to medical science will be published in future numbers of The Physician and Surgeon. The election of officers for the ensuing year resulted as follows: President, Doctor Frederick G. Novy; vicepresident, Doctor Lydia M. DeWitt; secretary-treasurer, Doctor John William Keating. The next meeting will be held in October.

THE most northerly medical society in existence is the Arctic Medical Association of Teller, Alaska. It was recently organized with Doctor T. N. Rogers as president and Doctor J. Meacham as secretary-treasurer. Doctor Rogers, who was formerly engaged in practice at Sault Sainte Marie, Michigan, states, in a letter just received, that the people of his town were six months without mail and did not learn the result of the presidential election until last February. During the winter months mail was carried over two thousand miles by dog teams.

RECENT PUBLICATIONS.

REVIEWS.

SAUNDERS' POCKET MEDICAL FORMULARY.*

THIS compendium of much knowledge contains more than eighteen hundred formulæ, a dose table, a list of incompatibles, hints, notes, pelvic and fetal measurements, a diet table and other information of great value and often much wanted.

*By William M. Powell, M. D., Author of "Essentials of Diseases of Children;" Member of the Philadelphia Pathological Society, et cetera. Sixth edition. W. B. Saunders & Company, Philadelphia.

SURGICAL NURSING.*

THIS hand-book is intended more especially to supplement the limited surgical training of some nurses. It is well written and unusually well illustrated.

*By Bertha M. Voswinkel, Late Nurse-in-Charge of Children's Hospital, Columbus, Ohio. Second edition, revised and enlarged. B. Blakiston's Son & Company, Philadelphia.

OBSTETRIC NURSING.*

THE great demand for this hand-book is not surprising. The author knows full well the particular instruction that nurses need.

*By Anna M. Fullerton, M. D., Obstetrician, Gynecologist and Surgeon to the Woman's Hospital of Philadelphia, and formerly Physician-in-Charge and Superintendent of its Nurse School. Fifth revised edition. Illustrated. P. Blakiston's Son & Company, Philadelphia.

ESSENTIALS OF DISEASES OF THE SKIN.*

THIS compend has been too long in the hands of medical students to need any introductory word and is too highly appreciated to need further commendation.

*By Henry W. Stelwagon, M. D., Ph. D., Clinical Professor of Dermatology in the Jefferson Medical College. $1.00 net. W. B. Saunders, Philadelphia.

THE ESSENTIALS OF MEDICAL CHEMISTRY.*

As the title implies this manual contains the essentials only of medical chemistry, but, brief as it is, it covers in a very satisfactory manner inorganic, organic and clinical chemistry and embraces also sufficient directions to serve as a laboratory guide.

*By Samuel E. Woody, A. M., M. D. Fourth edition revised and enlarged. Illustrated. P. Blakiston's Son & Company, Philadelphia.

A HAND-BOOK FOR NURSES.*

This work differs from most books of instruction for nurses in that it covers pretty much the entire scope of their medical studies. It teaches anatomy, physiology, dietetics, care of the sick, something about drugs, wounds, injuries, operations, diseases and obstetric nursing. *Multum est in parvo.*

*By J. K. Watson, M. D. (Edinburgh). American edition under the supervision of A. A. Stevens, A. M., M. D., Professor of Pathology in the Woman's Medical College of Philadelphia. W. B. Saunders, Philadelphia.

DISEASES OF THE HEART.*

The author has collected in this brief treatise his own researches in methods of diagnosis, and presented the subject of heart diseases, their diagnosis and treatment in a most practical form. He has devoted a chapter each to "Affections of the Pericardium," "Neuroses of the Heart," "Affections of the Arteries," and considered in the addendum, the heart reflex, the relation of diseases of the heart to other diseases, clinical facts regarding the cardio-vascular system, and stethophonometry. A full index is also appended.

*By Albert Abrams, A. M., M. D., San Francisco, Consulting Physician for Diseases of the Chest, Mount Zion Hospital and the French Hospital. Illustrated. Pages, 172. Price $1.00 net. G. P. Engelhard & Company, Chicago.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS.*

This most excellent and standard work both author and publishers have always kept in the van of progress. To a revision of the fourth edition has been added a chapter on the microscope and its use in uranalysis.

*By Charles W. Purdy, LL. D., M. D. (Queens University), Fellow of the Royal College of Physicians and Surgeons, Kingston, Canada; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School, Author of "Bright's Disease and Allied Affections of the Kidneys," also of "Diabetes—Its Causes, Symptoms and Treatment." With numerous illustrations. including photoengravings, colored plates, and tables for estimating total solids from specific gravity, chiorides, phosphates, sulphates, albumin, reaction of proteids, sugar, et cetera, in urine. 6x9 inches. Pages xvi–406. Extra cloth, $3.00, net. F. A. Davis Company, Publishers, 1914–16 Cherry street, Philadelphia.

RUDIMENTS OF MODERN MEDICAL ELECTRICITY.*

THIS little book is a disappointment. In our opinion it is not even properly named. It is pretendedly a primer of medical electricity arranged in the form of questions and answers. In reality it is a catechism on the Monell treatment of disease. The twenty or thirty cuts are presented presumably for the edification of beginners, but they look more like advertisements, as they are accompanied by no explanatory notes save the names of the instruments and of the manufacturers.

*By S. H. Monell, M. D., Professor of Static Electricity in the International Correspondence Schools. Edward R. Patton, Publisher, New York.

OBSTETRIC AND GYNECOLOGIC NURSING.*

THE author of this manual is a master of his art and in that possesses the first requisite of a successful writer. His book does not tell all that a doctor should know, but it does give in a lucid manner the information that a helpful but not troublesome nurse needs. It is the best book of the kind we have seen.

*By E. P. Davis, A. M., M. D., Professor of Obstetrics in Jefferson Medical College and Philadelphia Polyclinic. 12mo volume of 402 pages, fully illustrated. Price $1.75 net. Philadelphia and London: W. B. Saunders & Company, 1901.

INTERNATIONAL CLINICS.—VOLUME IV.*

THIS is an exceedingly valuable number. Particular mention is merited by the symposium on genitourinary diseases published in this and the preceding volume, the short article on recent advances in medical diagnosis, and the monograph on pathology. To the editorial staff of the third volume have been added J. W. Ballantyne, of Edinburgh, and John Harold, of London.

*Edited by Henry W. Cattell, A. M., M. D., of Philadelphia, with seven collaborators. J. B. Lippincott Company, Philadelphia, 1901.

DISINFECTION AND DISINFECTANTS.*

THE object of this little book is wholly practical, being a survey of the important disinfectants, their relative values, manner of use and withal a guide for physicians attending contagious cases, for boards of health, embalmers and even for the intelligent laity.

*By H. M. Brocken, M. D., Professor of Materia Medica and Therapeutics in the University of Minnesota; Secretary and Executive Officer of the Minnesota State Board of Health. The Trade Periodical Company, Chicago, Illinois.

BACTERIOLOGY AND SURGICAL TECHNIQUE FOR NURSES.*

THIS is a most beautifully written text-book on bacteriology and surgical technique for nurses. It is well illustrated and indexed and a credit to the publisher's art.

*By Emily M. A. Stoney, Superintendent of the Training School for Nurses, Saint Anthony's Hospital, Rock Island, Illinois. Price, $1.25 net. W. B. Saunders & Company, Philadelphia.

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

THE ETIOLOGY OF GALL-STONES.*

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GALL-STONES are classified according to their chemical composition as follows:

(1) CHOLESTERIN STONES:

(a) *Pure Cholesterin:* Generally these are oval in shape, varying in size from that of a cherry to a pigeon's egg, sometimes much larger, with smooth or warty surface, which is white, or stained yellowish, brown or green with bile pigment. On fracture, the crystalline structure is seen. Generally the crystals radiate from the center and are white, with occasional brown spots composed of traces of bile pigment. As a nucleus one often finds a tiny brown mass consisting of mucous, or epithelial cells about which the formation of the stone began. Pure cholesterin stones seldom show facets.

(b) *Cholesterin Stones:* These differ from the preceding principally in the per cent. of cholesterin they contain. This usually amounts to ninety per cent. The surface may be brown, greenish, or brownish-black. In many, there may be found a deposit of bile pigment one or more millimeters thick on the surface. Below this, large radiating crystals of cholesterin make up the bulk of the stone. This colored, outside layer is friable and easily breaks up into a fine powder consisting of calcium bilirubin with minute crystals of cholesterin.

(c) *Amorphous Cholesterin Stones:* These are small, varying in size from that of a pinhead to a pea. They are white and look like pearls. In fact they are sometimes known as pearl gall-stones. Chemically they consist of pure cholesterin or of cholesterin deposited around a tiny bit of epithelial debris stained with bile pigment.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

(2) BILIRUBIN CHALK STONES:

(a) *Pure Bilirubin Chalk:* These are small, from the size of grains of fine sand to that of peas. Generally they are dark brown or black and as found in the gall-bladder they are frequently as soft as wax, but on drying become hard, and are easily crushed into a fine powder or into scales which show a metallic luster. Some are, however, very hard when found in the bladder. They are composed of a compound of the carbonate of lime and the bile-pigment, the latter usually being bilirubin, but it may be one of its oxidation products, biliverdin, biliprasin, et cetera. This accounts for the differences in shades of color shown by these stones.

(b) *Mixed Bilirubin Chalk Stones:* These are composed of bile-pigment, lime and cholesterin. These are the ones most commonly found. They are generally multiple and may be found to the number of several hundred or even several thousand, varying in size from fine sand to that of a large cherry. These stones frequently show facets where they have rubbed together. Sometimes a brownish, alkaline fluid is found in a cavity at the center. In others, the cavity without contents is found.

(3) *Chalk Stones:* Very rarely stones consisting of carbonate of lime, generally more or less stained with bile-pigment, are found.

The nucleus of a gall-stone generally consists of epithelial cells, or mucus, but various bodies have been found to serve as a center about which a stone has formed. Iron and copper have frequently been found in the nuclei of biliary calculi, and bits of animal parasites, such as the liver fluke and round worms, have been found. FRERICHS reported gall-stones which contained globules of metallic mercury. The phosphate and sulphate of lime are rarely found as constituents. The number of stones may vary from one to five thousand, as reported by NAUNYN.

Having ascertained the important constituents of gall-stones, the next step is to make inquiry concerning the conditions which favor the formation of these concretions. It appears that cholesterin stones, both pure and mixed are always formed in the gall-bladder. Indeed, some authorities hold that all gall-stones are formed in the gall-bladder, but it must be admitted that the small bilirubin chalk stones are frequently found in the intrahepatic gall-ducts.

Cholesterin is a monatomic alcohol which is widely distributed in both plants and animals. It is found in many seeds, such as the cereals and legumins. In the animal body it occurs in nervous tissue, semen, ova, bile, intestinal contents and in the spleen. Whether it is to be regarded as a waste product or as a substance of physiologic value we are not in a position to determine. Its presence in semen and in ova has led some to hold that it has histogenetic value, but this is an inference which is not altogether warranted. There are those who look upon cholesterin as an excrementitious substance and who teach that one of the functions of the liver is to separate cholesterin from the blood and cast it out with the bile in the intestine to be eliminated in the feces. However, it has been found that increasing the amount of cholesterin in the food, either by feeding with this substance directly or by restricting the diet to those foods known to be especially rich in cholesterin, does not appreciably increase the amount of this substance in the bile. Normally cholesterin makes up about one per cent. of the total solids of the bile and this is not increased even when relatively large amounts of cholesterin are fed to animals or administered hypodermatically. However, we do know something about the formation and elimination of cholesterin, which is at least suggestive in our inquiry concerning the formation of gall-stones. Cholesterin is formed in unusually large amount in certain degenerative processes, as in fatty degenerations of the spleen, kidneys and testicles; in tuberculous tissue; in carcinoma and sarcoma; and in infectious inflammations of both serous and mucous surfaces, especially the latter. It may constitute as much as seven per cent. of the total solids of pus. Now the most reasonable hypothesis concerning the formation of cholesterin gall-stones is that this results only from infectious inflammation of the mucous membrane of the gall passages, especially in the gall-bladder. The infected and diseased membrane excretes cholesterin, which crystallizes as it were on the spot of its formation and a stone results. It is probably true that gall-stones are formed only where there is cholecystitis or cholangitis and in the majority of instances these conditions result from infection with the colon bacillus.

The carbonate of lime which combines with the bile-pigment to form gall-stones probably originates in much the same way. A slowly progressing infection of the mucous membrane leads to a calcareous degeneration of the epithelium and during this process the pigment is incorporated in the degenerated products.

Naunyn has studied the questions pertaining to the etiology of gall-stones more thoroughly and more scientifically than anyone else, and his monograph, "Klinik der Cholelithiasis," supplies us the most exact information to be found on the subject. The following is an abstract of **Naunyn**'s statements concerning the origin of gall-stones: "In the bile of the gall-bladder of cadavers one constantly finds bits of epithelium cast off from the mucous membrane. Some of these float singly in the bile while others agglutinate into clumps. In the bile of young people these epithelial scales appear quite normal, but in that of elderly persons, and especially of those who have died of tuberculosis, acute febrile affections or heart disease, and *always* when the bladder contains gall-stones, these epithelial scales will be observed undergoing fatty changes. Fat globules of varying size will be seen most abundantly about the nuclei and here and there myelin forms may be observed. There will also appear myelin clumps, some of considerable size, glassy and structureless. These consist largely of cholesterin and are the beginnings of gall-stones. At first the cholesterin is not crystalline and it may be mixed with bilirubin-chalk. Sometimes one finds deposits consisting of fat and cholesterin, with traces of bilirubin-chalk. **Minkowski** has found in some of these deposits twenty-five per cent. of cholesterin, thirty-three per cent. of bilirubin chalk and twenty per cent. of fat. They may contain in addition to the above-mentioned substances bile salts and free bilirubin. Ordinarily these clumps of degenerated epithelial cells are discharged into the intestines, but if for any cause the bile is unduly detained in the gall-bladder they harden, receive accretions and form stones."

Quite naturally the formation of bilirubin chalk stones in the intrahepatic duct has been attributed to condensation of the bile, but that this is not the correct explanation is shown by the fact that condensation of the bile does not cause the formation of the bilirubin chalk compound and the intervention of some other causative factor is indicated. This is most likely found in the degeneration processes that go on in the epithelial cells. At this point one asks what influence is it that causes these degenerative changes in the epithelium. In attempting to answer this question two possibilities suggest themselves. In the first place it may be that some normal constituent of the bile, when kept for an unusually long time in contact with the mucous membrane, acts as a tissue poison and induces these degenerations. This is hardly a reasonable supposition, but the fact recently demonstrated that normal bile brought in contact with the pancreas during life does act as a most powerful tissue poison shows that the theory is not so absurd as might at first be supposed. However, we will first see what there is in the second possibility. This supposes that the changes in the mucous membrane of the bladder and ducts are due to bacteria. On studying this question we find that normal bile, both in man and the lower animals, is sterile, but if the common duct be occluded the contents of the bladder and the ducts soon become infected. This has been demonstrated by experiments on animals and been observed clinically in man. The infecting organism is in the majority of instances the bacterium coli commune. Moreover it has been shown experimentally that the compound of bilirubin and calcium is formed in bile in which this bacterium is grown.

In order to bring this paper within the limit prescribed for it in this discussion I will formulate the following statements:

(1) Cholesterin and a compound of bile-pigment and lime, generally designated as bilirubin chalk, either singly or together, make up the essential parts of gall-stones.

(2) The cholesterin, which forms gall-stones, is not that brought to the gall-bladder from the liver as a constituent of the bile, but has its origin in the mucous membrane of the bladder.

(3) While both bilirubin and salts of lime are normal constituents of the bile, the chemical compound formed by the union of these substances and which enters so largely into the composition of gall-stones is not formed by the condensation of bile, but is formed so far as we now know only as the result of bacterial infection of the bile.

(4) Gall-stones are formed in the bladder or in the gall-ducts only when the mucous membrane of these organs is infected.

(5) The infecting bacterium which leads to the formation of gall-stones is in the majority of instances the bacterium coli commune, but it is probable that other microorganisms may have a like effect.

CLINICAL HISTORY AND DIAGNOSIS OF GALL-STONES.*

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GALL-STONES never form in childhood. They are seldom found in people before thirty years of age. They are observed more frequently in women than in men. Some authors give statistics tending to show the constancy of particular symptoms. I do not believe such statistics aid the clinician. I will report the last case which came under my observation.

When I saw MRS. F., aged forty-two years, on May 1, she said she was hastening her housecleaning, as she expected an attack of gall-stones on the eighth. Of the classic premonitory symptoms — constipation, flatulency, and distress in the epigastric region and right hypochondrium, which in some cases precede an attack by several weeks, only flatulency would present, and that for only three days before the oncoming of the pain. For twenty-four hours preceding an attack she always suffered from frequent urination. This, in my experience, is an uncommon symptom. Patient was able to predict the time for attacks because of their regularity. Last January hysterectomy was performed because of double pyosalpinx with chronic metritis, since which, each month at the time when her menses would have come she has had an attack of biliary colic. She had suffered from infrequent attacks before the operation, however, the first, nine years ago last October, the second attack two years afterward, and the third three years later, each when she was pregnant one month. She has not been pregnant since, but she has had one attack each year until last January, when they became of monthly occurrence. She said that she had made many examinations of the stools for gall-stones with negative results. This, the only positive sign of the presence of gall-stones, was absent.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

The pain would begin as a heavy pressure not unlike labor pains but pressing upward toward the heart and throat, and accompanied by belching of gas. About an hour later the pain would become stabbing and vomiting begin. The sharp pains would continue for three days, life being rendered endurable only by hypodermic injections of morphin. At this stage convulsions are seen in some nervous women. The pain would then subside gradually as it came. During the continuance of the pain there would be fever. This is generally observed. The passing of the pain would leave her exhausted, with slow pulse and clammy skin. The vomiting would cease within twenty-four hours, the vomitus consisting largely of bile. This, together with the facts that no stones were passed into the intestine, and that the pain would disappear, might indicate that the offending stone was crowded backward into the gall-bladder; that there was never complete obstruction of the common duct. If the pain were caused by the passage of a calculus into the intestine its duration would not probably be the same in each attack; as the stones would not likely all be of the same size, nor would the lumen of the common duct remain of the same caliber after traumatism so severe. The probability is, therefore, that the stones are in the gall-bladder and cystic duct. When there is a permanent impaction of gall-stones the violent pains may cease after a time and dull pains with occasional exacerbations, as in cancer, persist. About the time the pain ceased diarrhea would begin, there being a stool nearly every half hour for two days. It would then gradually cease. Diarrhea commonly follows an attack of biliary colic.

Jaundice would begin to appear the second day. The kidneys would then begin to excrete bile, the urine becoming almost black. Simultaneously severe aching would begin in the region of the kidneys and continue as long as the urine was yellow, as long as the jaundice was marked. Latterly the jaundice would not entirely disappear between the attacks. It would so nearly disappear, however, in about three weeks as to eliminate the thought of carcinoma of the gall-bladder or of the ducts, as its cause, since in cancer the jaundice is usually rapidly progressive.

Examination of the blood May 1, three weeks after an attack, showed hemoglobin normal, as was also the relation between the white and red corpuscles. The duration and degree of jaundice vary markedly in different cases. When the hepatic or common ducts are obstructed so long that the accommodation of the ducts in the liver is inadequate, jaundice is always present. In many cases in which these remain patent no jaundice is observed. If a suppurative process is present in the gall-bladder or ducts, jaundice is likely to appear, since the destruction of the epithelial lining permits absorption. The quick disappearance of jaundice indicates temporary obstruction of the common duct.

In this case I could outline the gall-bladder, which was enlarged and tense. Patient complained of soreness upon pressure. In many cases it is impossible to outline a tumor. If the gall-bladder be distended or there be adhesions from local peritonitis a tumor can usually be palpated and percussion shows dullness. When the cystic duct has been obstructed for a long time I have found the gall-bladder distended with a straw-colored thin fluid. Some report that by auscultation they have heard the stones rubbing upon each other. I have never been able to do so. In cancer, while confined to the gall-ducts a tumor could not be felt.

To make diagnosis between a tumor formed by gall-stones in the gall-bladder with adhesions and cancer of the same structure might be impossible, even after a careful consideration of the history, signs and symptoms. In one case of a man extremely emaciated I could feel nodules in the lower edge of the liver, due to secondary involvement. In the last case of cancer in which I made exploratory incision the lower edge of the liver, although involved, was perfectly smooth, the involvement being by contiguity of surface from the gall-bladder. The loss of flesh in cases of cancer in this region is rapid, and yet in some nonmalignant cases in which there have been repeated attacks of biliary colic the loss of flesh is also marked. The pain in cancer, although it may be intermittent, is more persistent, and when far enough advanced that tumor may be palpated, colic is usually absent, When cancer starts in the gall-bladder jaundice is a later symptom. I saw one case in which the jaundice was slight up to two months before death.

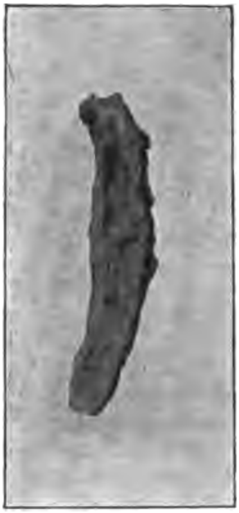

FIGURE I.

Vomiting is considered one of the most constant symptoms. In the case of MRS. B., upon whom I operated December 1, 1900, at Harper Hospital, and who had suffered well nigh constant distress in the region of the gall-bladder for four months, and who showed deep continuous jaundice with marked loss of flesh, the patient never vomited. Three large stones were found in the gall-bladder. The ducts were free.

When infection has entered traumatisms made by gall-stone the ducts may become closed by inflammation or by contracting adhesions, the gall-bladder becoming more and more distended until its purulent contents are emptied into the peritoneal cavity or some other viscus to which it has become adherent. In this way stones so large as to cause intestinal obstruction may pass; or, on the other hand, the gall-bladder may become small and contracted Abscess may form rapidly and the attendant perihepatic inflammation or local peritonitis cause tension of the muscles upon the right side of the abdomen with fever and disturbed heart action, and a diagnosis of appendicitis be made; but usually a careful inquiry into the history of the case will determine which is the offending organ. At a recent meeting of the Detroit Academy of Medicine, Doctor Heneage Gibbes made the statement that primary leucocytosis depended upon the amount of adenoid tissue in or adjacent to the site of suppuration. If this be correct, examination of the blood would be an important factor in differential diagnosis, since there is a great amount of adenoid tissue in the appendix. In these cases of cholangitis with or without gall-stones, jaundice is usually an early symptom. Metastatic abscesses and pyemia may occur.

I wrote the above after my examination of Mrs. F., May 1, and have not changed it, thinking the disclosure of operation would be more interesting. I expected to operate on the 7th, but her attack began with flatulency and the characteristic pain upon the morning of the 6th. She had suffered from soreness since my previous examination. I did not see her until evening, by which time the pain had become agonizing and the yellow of the urine was deepening. I operated at midnight at Harper Hospital. She has been losing flesh rapidly for the past three months, yet the depth of the adipose tissue upon the abdomen was several inches, necessitating a large incision. I found the gall-bladder distended and about twice the normal size. Fifty small gall-stones, many of them being of triangular shape and flat with sharp points resembling the tacks used by glaziers, were found in the gall-bladder, some of them completely blocking the cystic duct. The fluid in the gall-bladder was a light straw-colored mucus. Examination of one of the gall-stones showed that it was composed mainly of cholesterin, with some bile-pigment, some altered

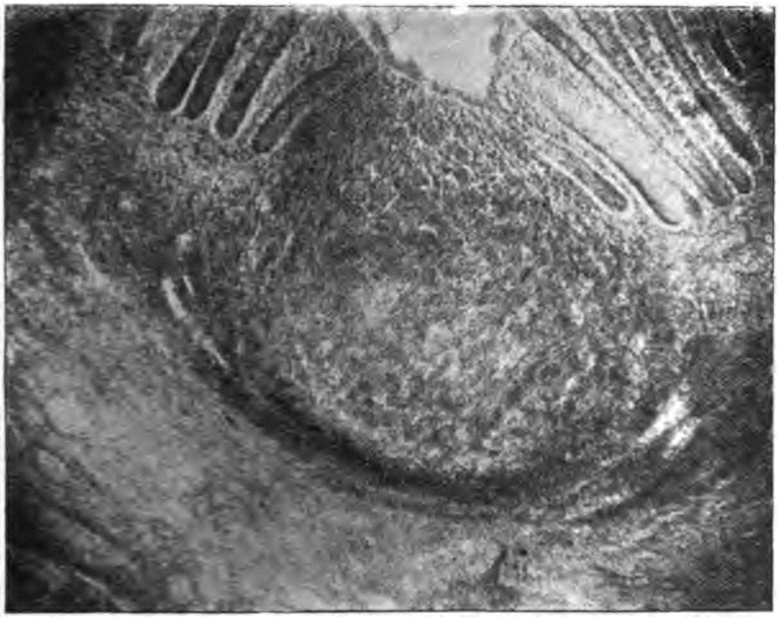

Figure II.

epithelial cells and small masses of mucin, but with no separate nucleus and no bacilli. I examined the other duct carefully, passing a probe through into the common duct. They were free. It, therefore, contrary to my wish, confirmed the diagnosis made several days before. I say contrary to my wish, because I have made a number of mistakes in differential diagnosis between this condition and cancer, as well as in determining the location of calculi. I think a mistake in this case would more likely convey the true status of our power of accurate diagnosis in the varied conditions found in the region of the gall-bladder.

When the patient was ready for operation she requested that I investigate the pain farther down, pointing to the region of the appendix vermiformis. She said the pain there had been severe all the afternoon.

Examination of blood taken at time of operation showed marked leucocytosis and the presence of mononuclear lymphocytes in a greater proportion than normal. This change in the blood cannot be explained by the condition found in the right hypochondrium, but by what was found at McBurney's point. I brought the cecum into the wound and found a firm erectile appendix with no adhesions. When I made incision into it thread-worms, oxyuris vermicularis, began to crawl out. All that we examined were adult females. The photograph (Figure I) of the appendix, which was split longitudinally, shows the proximal end of its lumen to be irregularly dilated, looking like the condition that prevails when an enterolith is formed, but none were present. Many microscopic sections were made. These showed a condition of acute inflammation throughout. The lymphoid masses presented a ring of lymphocytes round the germinal centers which stained intensely while the cells in the

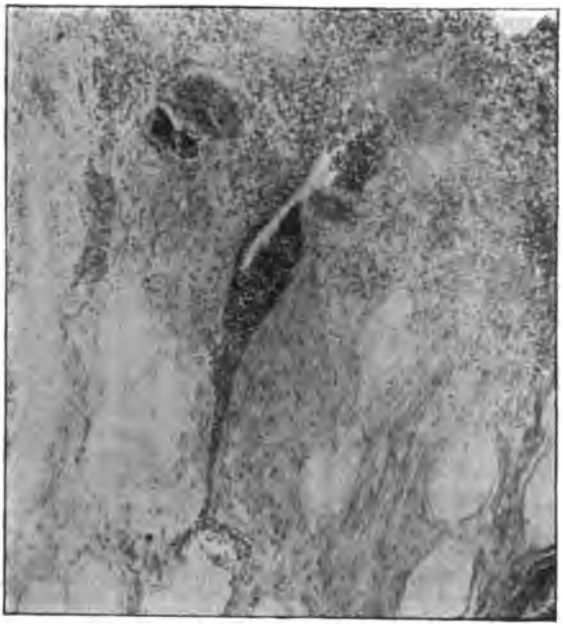

FIGURE III.

germinal centers were in an active state of karyokinesis. Pus in small quantities had formed. All the lymph paths extending from these nodes were full to distension with lymph corpuscles (Figure II), and could be traced to the outside of the circular muscle coat in places. Diapedesis was seen along the course of the small blood-vessels; in fact, there was evidence of intense inflammatory change throughout the entire organ. (Figures II and III).

To recapitulate, although many signs and symptoms usually present to enable the surgeon to make a diagnosis of cholelithiasis, yet the only positive sign, I believe to be the discovery of the gall-stone in the feces. When symptoms of disease affecting the biliary passages are persistent, exploratory incision should be made to complete the diagnosis and at the same time to give relief.

I am indebted to DOCTOR HENEAGE GIBBES for the microscopic and photographic work in connection with this paper.

A SYMPOSIUM ON GENITOURINARY DISEASES.

ETIOLOGIC FACTORS IN GONORRHEA.*

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A KNOWLEDGE of the etiology of a disease is necessary to the physician if he is to select intelligently the means of intrenching his patient against it, or the proper weapons wherewith to combat it if prophylaxis fails. The etiology of a disease is the etiology not only of the affection *per se*, but also of the various complications and sequelæ usually incident to it. This is particularly true of the disease under discussion, as it is not the initial urethritis, but the insidious remote effects of gonorrhea which make it an object of dread.

In dealing with the etiology of gonorrhea, the majority of writers confine themselves to a discussion of the infecting agent, considering the bacterium the *sine qua non* of the condition. That the disease is due to bacterial infection is practically beyond dispute. The observations of NEISSER, instituted in 1879, and elaborated by scores of observers since that time, place this fact beyond cavil. Whether the gonococcus is a good bug gone astray, or one naturally and inherently depraved, is a question of no practical importance. The fact that it is found in those cases of urethritis which we call gonorrhea, and which run the well-known obstinate and frequently unfortunate course, is sufficient to place it on the bacterial black list; while the fact that cases of urethritis in which the gonococcus is not found, progress to a speedy and complete recovery, seems very good evidence that the germ in question plays more than a minor role in the causation of the disease. Personally, I believe the gonococcus usually associated with other organisms to be the specific germ of gonorrhea. On this supposition the etiology of the disease is concerned with those agencies which make possible the entrance of the germ, facilitate its development, aid its migration to parts remote from the point of inoculation, and thus make possible the unfortunate train of complications and sequelæ which so often supervene. Agencies which produce a mixed infection are also to be considered.

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In discussing these points I shall limit my comments mainly to gonorrhea in the male. If gonorrhea in the male can be restricted the chief etiologic factor of the disease in the class of women whom we wish to protect will be correspondingly limited.

The male urethra is a narrow tube presenting five natural constrictions, and three dilatations. At either extremity of the membranous portion the urethra is surrounded by more or less unyielding tissue, the planes of the triangular ligament. It is lined for the most part by columnar epithelium, the fossa navicularis having a squamous covering for a few lines, and the transitional epithelium of the bladder being continued into the prostatic portion for a short distance. The fossa navicularis contains numerous small crypts, and one, the lacuna magna, of considerable size. The bulbous portion is studded with follicles, and presents the orifices of the ducts of Cowper's glands, the latter lying farther back in the membranous portion. In the membranous portion are also found the sinus pocularis, the ejaculatory ducts, and numerous follicular openings, and in the prostatic part are the tubules which convey the secretion of the prostate gland. The mouths of the urethral glands and ducts are directed toward the meatus, and if enlarged may engage the point of a bougie when instrumentation is attempted.

The germ entering the urethra finds ready lodgment in the epithelial structures, penetrates easily into the follicles, and if planted in the deeper urethra gains ready access to the glands of Cowper, the sinus pocularis, the ejaculatory ducts, epididymis and testicle, the prostatic structures, and if the last barrier is passed the way is opened to the bladder, ureters and kidneys. The gonorrheal pus accumulating in the expanded portions of the urethra is to a certain extent dammed back by the natural constrictions, and acts by its contact as a macerating and irritating agent. From these statements it will be seen that the anatomic conformation of the urethra possesses points of etiologic interest. Another anatomic structure which predisposes to urethral infection is a redundant prepuce. Of undoubted importance in syphilitic invasion, I consider the existence of a long prepuce a very potent agent in the acquisition of gonorrhea. A good majority of patients presenting themselves to me for gonorrheal treatment have such a prepuce. It seems reasonable to suppose that the bacteria may become imprisoned beneath the foreskin, escape a hasty genital toilet after coition, and subsequently reach the urethra and develop. Certainly germs so imprisoned can initiate a severe phimosis, balanitis and balanoposthitis. In passing I may say that I think the Hebraic custom of circumcision is worthy of gentile adoption.

The rich blood supply of the urethra, the abundance of erectile tissue adjacent to it, a mucous lining peculiarly susceptible to irritation, render hyperemia of frequent and ready occurrence. This affords another condition most inviting to the gonococcus. A urethra that might ordinarily resist a gonorrheal invasion will succumb when irritated by a urine laden with the metabolic products of alcohol, or when gorged with blood as a result of venereal excesses. If, as is claimed, phagocytosis is interrupted in the presence of gonorrheal toxin, we have in this another etiologic factor.

Among etiologic factors I would include failure of those indulging in illicit intercourse to observe certain hygienic principles—certain measures of ordinary cleanliness. Sexual contact in the presence of gonorrheal infection does not necessarily mean that the individual so exposed will contract gonorrhea. The prompt removal of all infectious material from the genitals will ward off the disease. Prolongation of sexual contact on the other hand invites trouble, and failure to thoroughly cleanse the glans penis, the retracted foreskin, and the prepucial sulcus accounts for many cases of gonorrheal infection. To complete the precautionary toilet the meatus should be carefully and properly washed, and at this point it may not be out of place to consider the question of preventive injections. When the germ first enters the urethra it is of course confined to the anterior portion. It does not lie back of the navicular fossa. The theory that there is an aspirating action at the meatus following the expulsive efforts during the orgasm accounts sufficiently well for the prompt entrance of the germ. At this time the germ is easily accessible, and its removal may be effected by irrigation properly performed, or by a copious flushing of the urethra by the stream of urine. It must be borne in mind, however, that if irrigation at this time fails to remove the infection, the irritation to the urethra will facilitate the development of the germ.

Now what are the duties of the physician in the matter of recommending prophylactic injections? Should we give advice which will perhaps lead the patient to believe that he may do wrong with impunity, or shall we withhold our suggestions in the hope that fear may keep him in the straight and narrow path henceforth? I believe it is the duty of the physician to protect his patient and the public. A man who can be restrained by fear only is not worth considering on his own account, but on account of the injury he may do to others I think it is justifiable to give any advice which will tend to prevent it. Consequently, when a patient asks advice as to preventive measures, I make it a practice to explain the seriousness of gonorrheal infection, and to point out the one sure prophylactic procedure. If this does not satisfy him I advise him concerning proper measures to take after exposure. The average young man of the world has an idea that antiseptic injections will often prevent trouble, and I prefer that my patient should wash the urethra with a suitable solution rather than with pure carbolic, or one to five hundred bichlorid.

Infringement of hygienic principles may be responsible for an innocent gonorrheal infection. Contaminated bed linen or clothing may supply the infecting agent. The practice of one man with gonorrhea sleeping with another, or permitting another to wear his unclean underwear or night robe, is pregnant with gonorrheal possibilities, and children are sometimes inoculated by sleeping with infected parents. Indiscriminate use of towels may result in specific urethritis or ophthalmia, while the classic infection from the closet seat, though improbable, is by no means impossible. We all realize that a woman can acquire gonorrhea innocently from a guilty husband, or a husband from a guilty wife. Let us be charitable, therefore, and not too prone to discredit the story of a patient who ascribes his trouble to a condition for which he may not have been responsible.

The physician himself may become a marked factor in the etiology of gonorrheal complications. He may even by the use of an infected instrument on a urethra free from gonococci afford the means of entrance to the initial germ. The latter is probably rare, but the former is only too common. There is no disease requiring closer observation, or more skill and judgment in its treatment than the one under discussion. There is no disease by which more harm can be done by belittling the seriousness of the trouble. To make light of gonorrhea and thus implant a false idea in the mind of a patient is to fail in our duty to society. The man who treats the disease by contract, and is satisfied to dismiss his patient with something to take internally, and injection to be used as directed, and instructions to come back in a week, is not doing his duty. He is more than any other agent responsible for the deep urethritis and mixed infection which almost invariably follow such treatment. The use of heroic injections in the hope of aborting the disease in its early stage often lays the foundation for subsequent stricture with all its attendant train of evils. The use of bougies or catheters while the urethra is still the seat of infection, mechanically forces the pus back into the deep urethra or even the bladder, with results upon which it is not necessary to dwell. Folliculitis, epididymitis, orchitis, prostatitis, cystitis, nephritis, any or all of these may follow. The bougie may further work evil by intensifying an already severe hyperemia, or by tearing the mucous membrane by engaging in the mouth of an inflamed follicle. From an abrasion the germs may be swept into the blood stream to find subsequent lodgment in the structures of a joint, the heart or some other remote locality which might otherwise have escaped.

The etiology of gonorrhea has been considered thus far from the standpoint of the physician only. There are other than medical factors, however, in the causation of the condition. Gonorrhea is a symptom, not a disease; a pathognomonic symptom of an all too frequent moral perversion. A study of the causes underlying the social evil would be a study of the true etiology of venereal diseases. The social evil is as old as humanity, and seems good for a number of decades yet. The evil is fostered by our modern false social ideas, and by the tendency of young men to work with their brain rather than with their brawn. Our young men are flocking to the larger centers of population where social depravity has its principal stronghold. Home influence is frequently wanting. Their surroundings and associations tend to fan the flame of passion, and the social dictum which, though damning the erring woman, exacts no penalty from the man who degrades her, is responsible for many cases of infringement of the moral law. Many a young man substitutes the club and the mistress for the home. He becomes *blasé* and runs the whole gamut of human experience while still a youth. He gradually teaches himself to regard virtue lightly, and thinks he is giving his wife a good bargain when for her youth and health and purity he exchanges himself. A good family name and so-called social position are more than offset by a mind overripened by worldly experience encased in a body outwardly fair, perhaps, but bearing within the seeds of future misery and suffering and degradation. The bargain is an unequal one, and our young women would do better to marry honest laborers *sans* family and social standing, but men who hampered by the necessity of toiling for their daily bread have built up healthy bodies and wholesome minds—nen who by choice or necessity have been denied the exquisite privilege of wrecking themselves upon the shoals of our modern civilization.

The hundreds of women who present themselves to be treated for pelvic troubles a few months or years after marriage can find a ready explanation for their, to them, unaccountable condition. The physician has only to review the past history of the husband to find his diagnosis. Gonorrhea in the husband, years, perhaps, before marriage, treated and supposedly cured. That tells the story. The cases are most pitiable, and anything which can be done to lessen their frequency will be a boon to humanity,

Are there any measures to be recommended by which the prevalence of gonorrhea can be lessened? I think there are. The state board of health spends thousands of dollars every year in preventing the spread of other infectious diseases, but gonorrhea is not on the list. An epidemic of smallpox throws a community into a state of terror, and people shudder with apprehension if the plague touches the fringes of our continent. Our health boards redouble their vigilance and money is readily forthcoming to combat these conditions, but gonorrhea is allowed to rear its ugly head throughout the length and breadth of the land without a protest. The licensing of prostitution was tried in Saint Louis in 1872, and it is stated that much good was accomplished. Popular opinion could not see that in case of two evils the lesser is preferable, and notwithstanding the protests of physicians throughout the state, the law was repealed. If such a measure is not practicable much might be accomplished by an understanding between the health boards and police on one side, and the keepers of brothels on the other. Medical examination of prostitutes at frequent intervals, by a physician appointed to do the work and authorized to give a certificate as to the condition found, while it would not preclude all danger of gonorrhea, would at least decrease the probability of infection. I believe the prostitutes would cooperate in this scheme, The argument that such a course would safeguard vice is not pertinent. It is not the frequenter of dives whom we wish to protect, but the innocent woman who may sometime become his wife. The safety of society will be increased.

But it is in education that we can enter our most powerful lever. The majority of the laity believe gonorrhea to be at its worst only a source of temporary local discomfort, a matter to be concealed from their friends, perhaps, but beyond the possibility of stricture, a disease incapable of working any permanent harm. Of its remote effects they are ignorant, and the fact that it may be communicated years after the discharge has disappeared is almost unknown. I believe it is our duty to explain these matters preferably before it is too late.

HALL, of Saint Louis, has this to say in a recent number of *The American Journal of Obstetrics:* "The old idea that the physician alone should have knowledge of sexual matter is wrong. Such knowledge should be disseminated. This knowledge would do good in two directions. First, if young men knew that they would be held responsible in after life if they should contract gonorrhea, they would not take the risk of contracting it. Second, if young women knew the risk incurred in marrying a man with loose habits they would look more carefully into his past life before taking the step." HALL further advises that in the last high school year in all our communities the pupils of both sexes should be given competent instruction in such branches as will cover these matters. I may add that I think such branches should be taught without false modesty, by a physician of standing in the community, either by a course of lectures or from an unexpurgated text-book. Parents should inform themselves concerning these matters and instruct their children. If they feel incapable of doing this properly they should delegate the task to the family physician and he should willingly and gladly perform what is his plain professional duty.

GONORRHEA IN WOMEN.*

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Gonorrhea in the urinary tract of the female does not differ essentially from the same disease in the male. Infection of the bladder, ureters, and kidneys is claimed by some to be less common because of the short, straight urethra which, when irritated, causes frequent micturition and consequently frequent flushing of the canal with the sterile urine. The genital tract of the female, from the vulva to the ovary, and the peritoneal cavity, both the pelvic and abdominal portions, any part or all of which may be invaded by the armies of Neisser, are absent in the male. The urethra is the only genital or urinary organ primarily infected in the male, while gonorrhea of the rectum is very rare. In the female the urethra, vestibule, labiæ, vagina or cervix may be primarily infected and gonorrhea of the rectum is comparatively common. The vestibule and urethra manifest symptoms of primary infection most frequently, the cervix next, and the vagina last of all.

From ten to forty per cent. of women, according to various authorities, are estimated to suffer or have suffered from gonorrhea. Some time ago I saw the statement that fully eighty per cent. of males over fifteen years of age have or have had the disease. In the male the onset of the disease is always an acute urethritis. This is followed by a subacute and frequently a chronic stage generally known as gleet. Besides it is highly probable that there may exist a latent stage in which all symptoms and discharge may be absent, but infectious material still be present in such condition, that although not recognizable by symptoms or microscope, when favorable conditions arise may again set up an inflammation, or transferred to a healthy vagina or cervix, and according to circumstances, cause an acute inflammation or remain in its latent condition more or less indefinitely, always capable, however, of causing mischief when a favorable opportunity presents itself.

Some, I know, consider this idea absurd, but equally capable observers acknowledge it to be a fact that women at least may and do have this latent form of the disease, and I believe that most of us have had cases in men who, though apparently cured for months, have come back with a posterior urethritis, orchitis, or cystitis, without a history of second exposure. Various attempts have been made to make clear the causes of these rather mysterious cases. Some maintain second exposures are the cause in spite of the history to the contrary, while others claim a person may become accustomed to his or her own germs to such an extent that they remain quiescent unless it be under conditions of great provocation. What seems to be a reasonable theory is that the inflammation is produced not from the presence of the germ but by a toxin of very irritating properties produced by the germ. When the germs are first introduced into a new field, if it proves a favorable one, they produce a large amount of this toxin and a consequent great irritation of the tissues. After a time, for some reason, the production of the poison diminishes and subsequently ceases, when the inflammation also subsides. The germ may now be said to have assumed its latent condition, producing little or none of the toxin unless aroused to activity again by some untoward influence, such probably as will produce a congestion of the parts, for example, excessive venery, exposure to cold, alcohol, drugs or other agents which cause congestion of the parts.

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* Read before the Ann Arbor Medical Club.

It is my firm belief that gonococci do assume this latent condition in the male and may in this state infect the internal organs of the female without the ordinary acute symptoms of the urethra and vulva being present. In support of this belief I have records of twenty cases wherein gonorrhea in the male preceding his marriage some months or years, had been apparently cured, for example, all discharge had been absent for some time and sedimentation and cover-glass preparation failed to show any gonococci. Nitrate of silver injections to excite a discharge were used in part of the cases but no gonococci were found. Of these twenty cases in not a single one did an acute infection develop in the bride, but within two years every one of the twenty women had developed chronic endometritis, salpingitis, or ovaritis, and nine also suffered from pelvic peritonitis and four from pelvic abscess. Fourteen of the twenty became pregnant; six of whom had abortions. All have remained sterile since the first pregnancy. Four have had hysterectomies for pelvic abscess or pus-tubes. Nine have had abdominal operations with removal of part or all of the organs and the remaining seven are chronic sufferers from inflammatory diseases of the pelvic organs. I have the record of a few cases wherein there has been no trouble following marriage. In these the cure seems to have been complete. GOLL, in the examination of one thousand and forty-six chronic cases of from four weeks to six years duration, found gonococci present in only one hundred and seventy-eight cases. NEISSER, in one hundred and forty-three cases of two months to eight years, found them present eighty times. WEINRICH, in twenty-five cases, found them present only twice. Of these cases, however, there is nothing said of their ability to communicate the disease.

There is no doubt that women are much more susceptible to gonorrheal infection of the internal organs soon after labor or abortion, and probably soon after or during a menstrual period than at other times, and it is quite probable that a germ of low vitality or virulency may invade the parts at these times when the resistance of the tissues is lessened, whereas they could not otherwise do so. A woman with gonorrheal infection of the uterus and tubes is not likely to become pregnant, although in exceptional cases they do and bear children. A healthy woman marrying a man who has had gonorrhea, in the majority of cases that have come under my observation, sooner or later, usually within two years, develop an endometritis and salpingitis. The majority have become pregnant and had one child or an abortion, up to the birth of which they frequently manifested no symptoms of infection, but after confinement, sometimes very soon, they experienced an acute infection, for which the obstetrician frequently has to bear the blame, but more often after some weeks or months the patient complains of backache, leucorrhea, painful menstruation and the other symptoms indicative of endometritis and salpingitis, which a local examination proves to be present.

Diagnosis.—An acute gonorrhea is not difficult to diagnose, even without the history of exposure or the microscope. The vesical tenesmus, severe burning on micturition, free mucopurulent or mucosanguinopurulent discharges, the intense irritation and itching of the vulva and thighs, together with the sensitive, swollen and inflamed condition of the parts are generally ample evidence; or, if a local examination cannot be had, microscopic examination of the urine will reveal the cause. Affecting the vulva and urethra the disease is practically always acute at its beginning, whereas the subacute or chronic form prevails when vagina, cervix, endometrium, tubes or pelvic peritoneum are infected. Until recently it was generally believed that the gonococcus could not cause a general diffuse peritonitis. Several cases have been reported during the past few years, however, wherein the gonococcus was the only germ found present. This would seem to prove its occurrence although it is probably quite uncommon.

A positive diagnosis of chronic gonorrhea is in many cases very difficult if not impossible, especially when there is no history of such infection and the microscope fails to reveal the gonococcus, as is very often the case when the internal organs are the only ones showing evidence of the disease. If there has been at any time an infection of the urethra or vulva, the mouths of the gland ducts, especially those leading to the vulvovaginal glands, are likely to remain red, the glands may be large and tender and their secretion purulent. If gonococci are to be found they are more likely to be present in the secretion from these ducts, the urethra, or Skene's tubules than elsewhere. Infection of the cervix, uterine cavity, tubes, et cetera, generally, but not always, follows infection of the external organs in a few days or weeks, although it may precede or the external organs may escape entirely.

There are only three causes for chronic inflammation of the internal organs: First and most common, gonorrheal infection; second, septic infection, most common after labor or abortion, but possible, I believe, at other times, as for example, after operations, the wearing of intrauterine pessaries, and obstructive dysmenorrhea when blood clots remain in the vagina or uterus for some time; third, tubercular infection, more frequently affecting the tubes. To differentiate between the causes one must in most cases depend upon the history of the case. The history of a chill, fever, and other symptoms of sepsis following a labor or abortion, would be fairly good evidence of septic infection, whereas a woman who has never been pregnant and who has no evidence of tuberculosis would be more likely to have gonorrhea. Frequently one finds tuberculosis when the abdomen is opened, although any history pointing to such trouble is negative and the general condition of the patient would hardly lead one to suspect its presence.

Methods of Infection.—Undoubtedly nearly all cases of gonorrheal infection are from person to person direct, and from persons of opposite sex. We must admit, however, the possibility of accidental infection from closets, bathtubs, bedding, towels, clothing, and that occasionally it is communicated from one person to another of the same sex. In 1896 there was reported at a medical society at Riga, the infection of three hundred and twenty-six girls from four to sixteen years of age. They had been confined in their quarters at the school and the infection was traced to one girl and the use of a common bathtub. A number of cases have come under my observation wherein I had every reason to believe the disease had been contracted by using the same bedclothing that had been used by another person having the disease. Wearing another's clothing which has been soiled by the discharge is without doubt a not infrequent method of contracting the disease. Children frequently contract the disease from sleeping with adults, using the same closets, bathtubs, towels, or clothing. I have known the husband to communicate it to his recently confined wife, and she in turn to the infant in this manner. Girls sleeping together not infrequently contract it one from the other. I see cases frequently which I believe to have been contracted in this way. One case I remember particularly well because of some trouble it caused me. A young lady came to my office for an examination. I told her she had gonorrhea. She evidently not knowing the significance of the disease told many of her friends my opinion, one of whom revealed some things to her which brought her back to me in a hurry. I tried to explain to her that she should vent her spite on the one who deserved it—that I was only the discoverer of her trouble and not its author. She persisted in the statement that the only way she could have contracted the disease was by sleeping with a girl friend, and certainly the unruptured hymen and the subsequent developments were in her favor. A very short time afterward, the girl she mentioned was married and about a week after the wedding the groom appeared in my office and showing me a very much swollen and succulent organ, asked "if every man had to go through this experience when he got married?"

Treatment.—The treatment of the female, so long as the disease has not attacked the internal organs, does not differ essentially from that of the male, but special efforts should be made to prevent infection of the uterus when it has not already taken place. A thorough examination to ascertain the extent of infection should be made in all cases, the greatest care being taken to avoid infecting parts not already infected. When the disease is confined to the vulva I should advise against the vaginal douche or other local treatment except frequent washing of the parts with antiseptic solutions and the use of antiseptic pads. When the urethra or bladder is infected diuretics and sedatives do fully as well as anything. When the vagina is invaded put the patient in the genupectoral or Sims's position, ballooning the vagina, thoroughly cleanse every part, filling the vault and covering the cervix with antiseptic tampons. This should be repeated once or twice daily as long as the infection remains in the vagina or vulva, but is absent from the uterus. Frequent douching as well as washing of the external parts are indicated, using bichlorid, one to five thousand — one to five hundred; formaldehyde, one to one thousand — one to fifty; permanganate, one to six thousand —one to one thousand; ichthyol, two to five per cent.; protargol, two to five per cent.; boric acid, silver nitrate or other suitable agents. Some prefer medicated pessaries, using these or other antiseptic agents. Others, use what is known as the dry method. The parts are carefully exposed and thoroughly cleansed, then apply a strong solution of silver nitrate, and follow with a dry powder of boric acid, talcum, lycopodium, or bismuth. This is painful and may require an anesthetic.

I have not found the so-called abortive plan of treatment particularly valuable. It is more destructive to the tissues than the germs; indeed tissue vitality is so impaired by it that the disease more rapidly advances with its use than without. Moderately mild antiseptic treatment constantly applied has given me the best results. Nevertheless, despite all precautionary measures, and the best treatment, the disease will in a large percentage of cases, extend to the uterus.

Once in the uterus it is rarely possible to prevent infection of the tubes and peritoneum. In a few cases I have apparently succeeded by thoroughly cleaning out the uterus early in the disease, and keeping up free drainage, and the free use of antiseptics. After the utricular glands are infected it is practically impossible.

When the infection has reached the tubes it may result in an acute pyosalpinx, peritonitis or pelvic abscess; or a chronic form of inflammation may result, lasting indefinitely. Some cases recover and I have seen a number of such apparently recover completely and bear children. As a rule, however, they become sterile and assume a state of chronic complete, or semiinvalidism, unless the infected organs are removed.

The rule I follow, unless something calls for radical treatment in the way of operation, is to keep up the treatment of douching, tamponing, and drainage until it becomes apparent the patient is not in this way to be cured. Then I suggest the more radical and hopeful treatment.

Pus-tubes may be treated by removing them or draining through the vaginal vault, but are seldom cured except by removal. Pelvic abscesses generally require removal of tubes, ovaries and uterus before a cure is effected. A thoroughly infected uterus is very difficult to cure and in many cases, the patient is better off without it. With the uterus, tubes, and ovaries removed and the peritoneal cavity permanently closed the disease can usually be eradicated.

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SYPHILITIC ONYCHIA.*

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THAT syphilis is a disease which should be positively diagnosed at the earliest moment, will not be contradicted. That it is not so diagnosticated has many times been the observation of us all. At the present time I have under my care three such examples: one, that of a physician who on January 10 noticed a painful sore within the meatus but not until February 23, when I pointed out to him the macula, did he know that he had syphilis; another had been treated for a secondary eruption on the tonsil by a physician who does not know that the primary sore on the foreskin is scarcely healed, and that with the sore throat there has been a typical macula on the body affecting even the skin of his face; while a third, who had been under the care of a physician all summer, married in the autumn, because his doctor did not appreciate that the sore, which even yet has not lost its induration, was other than a chancroid. There are, on the other hand, many cases wherein not alone the careless or inexperienced may be mistaken, in which every symptom must be carefully considered, and even then the momentous question of diagnosis occasionally held in abeyance.

It is not the intention of this paper to discuss syphilis in general, but to call the attention of the Academy to a few diagnostic points and chiefly onychia. In my experience onychia is a rare symptom. My attention has been called to two cases within a few months. That it is rare I judge not from personal experience alone, but from the fact that in conversation with others I find some who do not recall having ever seen a case, and some are uncertain when the name is mentioned what it means.

Referring to BILLINGS as an authority, we find a number of words with plain meanings. Thus onychia signifies inflammation and suppuration in the side or root of a nail. Onychoclasis—fracture of the root of a nail. Onychocryptosis—disease of nail follicles. Onychogryposis — hypertrophy of a nail with a curvature. Onychophyma — thickened and roughened nails, as in syphilis and leprosy. Paronychia—inflammation around the nail. Now, if, while keeping these definitions in mind, we listen to what different authorities say concerning onychia syphilitica, it will be observed that many of these terms are used as synonyms in practice. Many authors do not refer to the subject at all. Others speak of paronychia, which may be a simple septic infection like a run-around, or of syphilitic dactylitis, which is much more common as a tertiary symptom than secondary and is usually an ulcerating gumma.

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*Read before the DETROIT ACADEMY OF MEDICINE.

You will have noticed that onychia has been defined as an inflammatory condition, but in the following excerpts the term does not evidently carry this signification to all minds and certainly not to mine.

Lydston, in a few lines, says that fingers and toes may become affected by syphilitic infiltration, turning lusterless and brittle. If the infiltration be very pronounced there may be secondary pus infection and the destructive form of syphilitic onychia. Lang, in the "Twentieth Century Practice," says: "Dullness, discoloration, irregular deformities, splitting, and splintering of nails occur by themselves. They usually accompany palmar or plantar syphilis extending to fingers or toes, or may be specially located on digits, persisting after the general eruption disappears, and finally return to a normal condition."

Onychia syphilitica is applied to the papule or gumma of the bed of the nail. This may be very painful and continue until absorption or healing of the ulcer occurs. Usually single nails are affected, but sometimes several fingers or toes are attacked at the same time. If the matrix be diseased the nail is seldom reformed into its normal shape.

Blake, in his unique work on the hand, does not refer to this affection.

Hyde and Montgomery state that nails show every grade of atrophy. Milder forms are more common than supposed, frequently not being detected by the patient. There is loss of luster to the nails, a dirty, yellowish hue, which may be covered with transverse striæ, dots, or white spots, presenting a characteristic worm-eaten appearance. Hypertrophic changes are much more rare. Nails may be thickened at the same time dots and depression are present, showing atrophic with hypertrophic changes.

White and Martin say syphilitic onychia is due to systemic poison affecting nerves at the matrix. Nails become dry, brittle and lusterless (friable onychia), furrowed, loosened, thick and discolored (hypertrophic onychia). The dry form is apt to be present with papular eruption, the moist with pustular eruption. The toes are as likely to be involved as the fingers. Paronychia beginning with a painful papule becomes soft and breaks down. The nail often comes off with destruction of matrix and the returning nail is disfigured or rudimentary. The dry forms recover with perfect nails.

Keyes believes all forms of syphilitic onychia progress very slowly, ending in recovery. Nails may with earlier eruption of skin lose their luster, become longitudinally furrowed, brittle, cracked and scale off at the extremities and sides. Many white spots on nails show poor epithelial nutrition. The condition may cease at any time or the nail become undermined and shed. Symmetry is apt to be present both on fingers and toes.

Chetwood and Keyes state that in intense early eruption the nails are likely to get thin and lose their luster, to show white spots and become brittle. Later, due to influence of disease upon matrix, the changes become more marked, constituting dry onychia. After thinning of nail there are formed ridges and furrows from lunula to tip. This form is rare but less so than that in which the nail ceases to grow entirely. The tip grows forward but terminates posteriorly in an abrupt, jagged margin. The more common hypertrophic form is not affected by treatment. The prognosis is favorable but when coming on after two years iodides and mercurials are desirable. The painful ulcerating paronychia involving the entire nail is more common than onychia.

These authors also speak of similar conditions produced by eczema and psoriasis. I do not remember of having seen any conditions of this sort for which the syphilitic disease could easily have been mistaken. The ulcerative form, especially of the toes, resembles ingrowing toe nails. The matrix is affected secondarily.

TYSON mentions the distorted nails as due to syphilitic onychia.

I will now report a case which is interesting in so many respects that I am sure you will excuse me not only for consuming the time, but you will also add to the report from your own experience and elucidate some of the unusual points to the edification of the meeting.

The patient, a married man thirty years of age, had been known to me as his family physician for some years. He was a traveling salesman and at times had severe headaches which were relieved by sprudel salts and quinine. The family history is good, and never in any way have I been able to entrap him into admitting a departure from the path of virtue. His wife is above reproach and is perfectly healthy, having always been kept advised of her husband's condition. March 23, 1899, he presented himself with a small ulcer, not indurated, on and under a long foreskin near the glans penis, believed to be secondary posthitis. During my sojourn in New York DOCTOR THADDEUS H. WALKER burned this ulcer, and on my return, April 16, the ulcer had completely healed without becoming indurated. There was one enlarged superficial inguinal gland on the left side so painful on pressure or on exertion that the patient was obliged to remain in bed a week. I opened the soft gland, liberating dark blood but no pus, and after two days he was able to be about. On May 20 the patient returned with a light, red papulo-pustular eruption on his back, chest and abdomen, each papule being around a hair. Glands in the axilla were noticeable. They were scarcely so in the right groin, while on the left side the gland was much smaller. The man at that time had been eating large quantities of strawberries, but four days later, having eaten no strawberries, the eruption was fading. While in the last named condition DOCTOR BIDDLE examined the case with me and considering all the circumstances believed with me that the patient did not have syphilis. There had been no sore throat or unusual falling of the hair, of which he had little at the best. On May 27 the spots were fading, leaving no color, yet on July 3 the eruption had not entirely disappeared, but was noticeable in patches of vesicles arranged in forms like little animal tracks around the pubis—papular—around hairs and on hairy parts, the patient being a hairy man. At the last named date I first noticed preexistant papules.

I did not see him again until September 3, after he had been taking one-eighth grain of the protiodid of mercury three times a day from a consistent homeopathic physician in Toledo. The cervical and epitrochlea glands could not be discovered, nor were there any signs of eruption other than a few brown spots on the back, and my attention was called to a slight clubbing of some of the digits which I had not been able to explain by a mitral murmur that had existed for a long time. During the next month the patient suffered almost continually from headaches having a temperature ranging as high as 99.8° Fahrenheit, and a coated tongue. Having concluded that all these symptoms could be explained on no other basis than that they were syphilitic I had kept him on tonic treatment with mercuric chlorid in doses of one-thirty-second to one-sixteenth of a grain three times a day. By October 7 the temperature was again normal and the headaches had vanished, but there had appeared an undoubted squamo-papular syphilide on the leg, and there were small patches on one tonsil. October 13 both thumbs, the forefingers and little fingers were clubbed. There was quite a deposit under the thickened nail and the nail was growing forward in a spiral shape. October 24 the weight of the patient had increased since September 5, from one hundred and eleven pounds to one hundred and sixteen and one-half pounds, his normal weight. November 19 the soft deposit under the nails was no better. The lunula of the nail was very thin and tender and the nails broke easily at the extremities and side, their color being that of cigarette fingers.

In December the headaches again began to trouble him but they subsided when the doses of iodid of potash had reached twenty grains three times a day.

January 16, 1900, a few rupia-like spots were present on the inside of the thigh which were treated, with quick improvement, by painting them with collodion saturated with mercury. Again a squamous syphilide appeared, accompanied, as were all of his earlier eruptions, with much itching. This seemed to be mitigated by semiweekly baths at the Clark Springs. During the year 1900 the nails reached their most pronounced abnormality in July, from which time they have steadily improved until one can scarcely notice that they have been diseased, and two years after the first infection the patient is feeling as well as at any time in his life.

In reviewing this case we first suggest that the smallest primary sores may be followed by most persistent and varied secondary eruptions. So far as we can learn there had been in this case no secondary maculæ, but the eruption had taken the forms of papules, small vesicles and pustules, papulosquamous and rupial spots.

We suggest in the second place that it is unusual for the lymphatic system to be very slightly affected in general while a single gland rapidly enlarges and softens to the extent that fluctuation is closely simulated.

We suggest further that when, on July 3, patches of minute vesicles, in forms as if they arose from the claw tips of many tracks, were noticed, the diagnosis should have been definitely settled. Such grouping of vesicles or papules in doubtful cases is always the mark of syphilis.

We suggest in the fourth place that during the second stage of syphilis, or in doubtful cases, a thinning of the base of the nails with loss of natural luster should be looked for and taken advantage of early for diagnostic purposes.

We suggest in the fifth place that a saturated solution of mercury in collodion is an excellent dressing for many syphilides; and finally that the experienced and constant student of syphilis will occasionally fall into unavoidable error. Such a one, having erred himself, will have greater sympathy for the less experienced in their errors.

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BACTERIOLOGIC FINDINGS IN CYSTITIS.*

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BACTERIOLOGISTS have come to the aid of the genitourinary surgeon both in the prophylaxis and treatment of cystitis. The idiopathic cystitis of former times is now traced to its specific cause. We are no longer justified in considering ammoniacal fermentation of the urine, for example, as due to the unexplained action of certain unorganized chemical ferments, but to the specific action of certain living organized ferments called bacteria, upon urea.

The predisposing causes of cystitis are traumatism to the bladder or urethra, the action of certain irritant drugs upon the bladder mucous membrane when taken internally, retention of urine from atony of the bladder or stricture of the urethra, anemia with poor general nutrition, pressure upon the bladder by other organs or tumors, catheterization and the passage of instruments. The exciting causes of cystitis are the bacteria which gain entrance into the bladder from the urethra by catheterization or the passage of instruments or from some other focus of infection as an appendiceal abscess by transmission of the germs through the lymph and blood currents.

The importance of instrumentation of the urethra and bladder in the etiology of cystitis, led me, upon the suggestion of DOCTOR DARLING, to investigate the histories of one hundred and six genitourinary patients, who presented themselves for examination or treatment in PROFESSOR NANCREDE'S clinic at the University Hospital. The question to be determined was whether any form of instrument had ever been introduced into the urethra or bladder and what the history of the case was subsequent to the instrumentation. From this inquiry I have been able to draw the following data: About seventy-five and four-tenths per cent. of the total number of cases had instrumentation of the bladder either by bougies, sounds or catheters previous to their entrance into the hospital and sixty-two and five-tenths per cent. of these cases had cystitis. Of the cases that had instrumentation without cystitis subsequently developing thirty-six and two-tenths per cent. had the injection treatment for their gonorrhea by means of a glass syringe the tip of which was introdued into the meatus urinarius and the remainder had bougies or catheters used for the relief of stricture which developed subsequently to their gonorrhea. Eight per cent. of the total number of cases had cystitis without previous instrumentation, the cystitis having been due to tuberculosis or calculus formation.

With the exception of the cases of tuberculosis or calculus in the bladder (eight per cent of the total number) sixty-two and five-tenths per cent. of the cases which had instrumentation of the bladder probably developed cystitis as a sequel of the operation. Two of the cases developed cystitis after their entrance into the hospital without having had any previous urethritis. They had been catheterized after operations for other diseases by an orderly who did not appreciate the importance of careful attention to asepsis in passing a catheter into the bladder. One man had used a straw for catheterization of his bladder and another had attempted to pass an old rusty metallic catheter into his bladder and during the manipulation of the instrument he broke off its distal end which remained in the posterior urethra. The instrument was removed by DOCTOR DARLING through an external urethrotomy.

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* Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

Some of the recent bacteriologic findings in cystitis are interesting. YOUNG, of Johns Hopkins Hospital has demonstrated that the gonococcus alone without mixed infection may cause cystitis. The cultures were obtained directly from the bladder wall by aspiration above the pubis. The pelvic region was prepared as for any major operation, that is, shaved and cleansed with soap, ether, alcohol, bichlorid of mercury, potassium permanganate and oxalic acid. Sterile towels were put around the seat of operation, A large aspirator with tubes and needles was boiled. The hands of the operator were carefully sterilized and the blunt end of the needle covered with sterile gauze in making the puncture into the bladder. The aspirated urine was collected in sterile test-tubes and flasks, the tops of which had been flamed. By this method YOUNG has practically never had a contamination. He says that the operation does not cause much pain and is less disagreeable than catheterization which may do great harm by introducing germs from the urethra into the bladder.

Cultures were obtained by aspiration in five cases of acute gonorrhea. In all of them there was a posterior urethritis and in three an acute cystitis but in only the first could a culture of the gonococcus be obtained. In the first case the urine contained a great deal of blood which furnished a good medium for the development of the gonococcus, while in the others the urine contained but little albumin. It may, therefore, be concluded that gonococci do not live in urine unless it contains a considerable amount of albumin. In one case it was found that the gonococci were present in great numbers in the bladder without inducing a cystitis. The presence of the germ alone without such predisposing causes as congestion, retention and a richly albuminous urine is not a sufficient cause in itself to produce cystitis.

YOUNG also reports a case of severe chronic cystitis of five years' duration in which he found the gonococcus in pure culture, the urine being obtained by aspiration of the bladder. In another case he found the gonococcus associated with the baccillus coli communis. In a third case of gonococcus cystitis it was demonstrated that other bacteria tend to appear and increase in numbers while the gonococci diminished so that in ten weeks the gonococci were far outnumbered by bacilli and streptococci.

The investigations of BROWN, of Johns Hopkins University, are very interesting although the urine was not obtained as directly from the bladder as in YOUNG's method of aspiration. The investigation was conducted in women entirely, in whom, on account of the shortness of the urethra, there is less danger of contamination than in catheterization of the male bladder.

A careful cystoscopic examination was made by DOCTOR H. A. KELLY in all the chronic and most of the acute cases of cystitis in women and the condition of the bladder thus determined. The following method was adopted for obtaining the urine aseptically from the bladder. The vestibule of the vagina and mouth of the urethra were first cleansed with bichlorid of mercury solution (one to one thousand) or a saturated boric acid solution followed by sterile water. A sterilized glass catheter with a sterilized rubber cuff on its distal end was then introduced into the urethra, the operator only touching the rubber cuff at about its middle. After the urine has flowed for a short time in order to wash out what bacteria were introduced from the urethra into the bladder by this procedure, the rubber cuff is withdrawn by traction on its distal end, and ten to twenty cubic centimeters of urine collected in a sterile test-tube, the usual precaution being observed of removing the cotton plug only during the reception of the urine. The urine was then examined bacteriologically according to the usual methods in use for such work.

It will be of interest to mention briefly the results of this investigation. The bacillus coli communis was found in fifty-seven and seven-tenths per cent. of the cases of acute cystitis in women; the staphylococcus pyogenes albus in nineteen and two-tenths per cent; staphylococcus pyogenes aureus in seven and two-tenths per cent.; bacillus typhosus, bacillus pyocyaneus and proteus vulgaris in three and eight-tenths per cent. each. In chronic cystitis the bacillus coli communis occurred in fifty-five and two-tenths per cent. of the cases; staphylococcus pyogenes aureus in ten and three-tenths per cent.; staphylococcus pyogenes albus in six and nine-tenths per cent.; a slowly liquefying (gelatin) white staphylococcus in thirteen and eight-tenths per cent.; bacillus proteus vulgaris in three and four-tenths per cent. The tubercle bacillus was present in six per cent. of the cases. The bacteria were always found in pure culture except in one instance when the colon germ and tubercle bacillus were associated.

The greater frequency of the colon bacillus as compared with other bacteria in cystitis has been observed by most investigators upon the subject. **Brown** discovered that the most common mode of entrance of these bacteria into the bladder was from the urethra by catheterization, although this operation was done with extreme care. So frequently has this accident happened at Johns Hopkins Hospital that **Kelly** is inclined to consider catheterization as a major gynecologic operation. The cases upon which this observation was based were women who had been operated upon and were subsequently catheterized on account of inability to void urine. The condition of the bladder was carefully studied before, during and after infection. The results can, therefore, be considered to be sufficiently well-established to warrant the conclusion that unusual care and attention to surgical asepsis should be exercised in the operation of catheterization.

It may be of interest to report here my bacteriologic findings in two cases of cystitis at the University Hospital. The urine was collected in the following manner: The hands of the operator were first scrubbed with brush and an alkaline soap for ten minutes, then cleansed with sterile water followed by immersion in bichlorid solution of one to one thousand for five minutes. The catheter was sterilized by boiling for fifteen minutes. Before passing the catheter the outer and inner surfaces of the foreskin, glans penis, coronary sulcus, frenal sulci and meatus were cleansed with a carbolic solution of one to forty, or a bichlorid solution of one to two thousand. The urethra was then irrigated with a saturated boric acid solution to remove the excess of bacteria and urethral discharge that might be present. Sterile vaseline was used to lubricate the instrument. The last portion of the urine obtained from the bladder was allowed to flow into a sterile test-tube the top of which had been flamed.

Case I. — *Cystitis, Enlarged Prostate, Atony of Bladder.* — Surgical number, 379.—A man, aged fifty-eight years; white; married. Admitted February 27, 1901. Complaint—Frequency of micturition and a burning sensation in end of penis. Family history negative. Patient had varioloid at fifteen, measles at eighteen, and later suffered bilious attacks and typhoid fever, from which he made good recoveries. He served in the army and navy, and drank a great deal of liquor while in the navy. Had inflammation of lungs three years ago, when he was sick for two months. Has been a masturbator all his life.

History.—Patient had gonorrhea thirty-five years ago. There was a yellowish discharge from the urethra for two weeks. The urethra was irrigated with a glass syringe, the tip of which was introduced into the meatus. His gonorrhea was cured at this time. He had a soft chancre which disappeared in a few days under the use of bluestone and burnt alum; no sequelæ. About three years ago he experienced disagreeable sensations in the bladder and pain during micturition. Last June he began to have a burning sensation in the bladder most intense at the end of micturition. The amount of urine voided at one time grew smaller every day until one day in October, 1900, he could not pass water at all. A physician passed an instrument to relieve the condition. The patient thinks that he cut the prostate. Patient voids urine every forty-five minutes, getting up six or eight times during the night. The amount passed at a time is about two ounces. The urine was drawn by catheter twice a day, morning and evening, while the patient sojourned in the hospital.

Examination.—Patient has a pale, sallow complexion and complains of general weakness and exhaustion. No discharge from meatus; genitals normal; last portion of urine when withdrawn by a catheter contains pus. Some of the urine was withdrawn and collected in sterile test-tubes according to the method described above. Cultures on agar in Petri dishes grown in the incubator for twenty-four hours show flat-spreading surface colonies of a dull white color. The deep colonies are yellowish, round or oval. They show a yellow granular center surrounded by a homogeneous zone. The cultures have the strong odor of amine and indol which is frequently readily detected by the surgeon in cases of purulent appendicitis. Stich cultures in gelatin showed a rapid growth along the line of inoculation with the formation of a thin white film on the surface. Inclined agar streak grown in the incubator for twenty-four hours shows a moist, white, rapidly spreading growth as observed from day to day. Milk is coagulated in twenty-four hours with the formation of a solid coagulum readily separated from the whey. The same milk when not inoculated with any germ shows no growth. Stab cultures in glucose agar grown in the incubator for twenty-four hours showed the formation of gas bubbles which became so numerous within thirty-six hours as to cause the agar to spread apart in fragments. The indol reaction was present. Examination of a hanging drop of the culture showed cocci in pairs and groups, also short rods, about four times as long as wide, slowly motile.

From the above data it is evident that the germ causing the infection was a virulent form of the colon bacillus, introduced into the bladder probably by instrumentation.

CASE II.—*Cystitis.*—A man, aged twenty-nine; married. Admitted March 27, 1901. Family history negative.

History.—Four years ago patient noticed a profuse whitish discharge from the urethra, which his physician said he contracted from his wife. He sometimes has sharp darting pains which radiate from the kidney region to the testicle. These are preceded by dull pains in the penis. There is blood in the urine sometimes. Also frequency of micturition, patient being obliged to get up three or four times during the night. He has an external hemorrhoid. No history of instrumentation of the bladder previous to entrance into the hospital.

Examination.—The bladder was examined with a cystoscope, but nothing could be determined on account of bleeding from the mucous membrane. Cultures on agar in Petri dishes grown in the incubator for twenty-four hours showed white round or oval colonies, granular with sharp, smooth borders. Stich culture in gelatin grew along the line of inoculation, liquefied gelatin; granular deposit in bottom of tube, liquid cloudy. Agar streak gave a thin, moist, granular, whitish covering after being grown in the incubator for twenty-four hours. It does not form gas nor produce the indol reaction. Hanging drop shows small cocci arranged in irregular groups. some forming diplococci. No motion was observed. The above are the cultural characteristics of the staphylococcus pyogenes albus. I isolated the same germ from the smegma in the coronal sulcus of the glans penis, which suggests the possibility of the germs having been introduced from without.

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SEQUELÆ OF GONORRHEA.

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THE statement that gonorrhea is responsible for more deaths than syphilis is startling and should arouse more than a passing interest in the sequelæ of this disease, which far more frequently causes a fatal termination than its acute form. The gynecologist finds gonorrhea responsible for much of the damage that he is called to repair, and the physician finds it a common factor in sterility of both male and female. It is conceded that a woman has the right to select the father of her children, but she may be disappointed in the man when, after marriage, she finds that gonorrhea has rendered him useless for procreative purposes, or, still worse, that along with his love and affection he has brought to her an infection which will make the remainder of her life miserable and in many instances shorten its years.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

It is possible, then, that the sequelæ of gonorrhea may interest a great many individuals. While gonorrhea may be cured it may leave a barrier at any point along the urethra in the form of a stricture or permanent changes throughout the genitourinary tract. Sometimes it may be quickly driven from its point of invasion, but in other instances it may lodge at any point from the fossa navicularis to the kidney, remaining dormant for years to be aroused to any degree of activity according to the provocation, interfering with the function of important organs, forming abscesses and destroying tissues.

The belief that the gonococcus is a rather mild and harmless germ and that its harmful results are due to its association with other germs has been somewhat shaken by the investigation of YOUNG, of Johns Hopkins University. He found the gonococcus alone in perineal and scrotal abscesses following stricture. He also found it in the urethra and bladder long after the disease was supposed to be cured, even when no stricture was present. Aspirating the bladder of a patient suffering from cystitis, he found a pure culture; the only evidence of urethral infection in this case dated back five years. No instrument had been introduced into the bladder for four years previous to the examination. There are cases wherein the tissues have been bathed in germ-laden secretions for months and a cure has been secured without the destruction of tissues, but the hyperemic condition of the tissues that remains is a constant annoyance to the patient, and when located about the neck of the bladder, in the prostate, or in the seminal vesicles, causes such vesical irritation and pain in the testicles that the patient has been driven to seek relief in castration or suicide.

The object of this paper is not to discuss the treatment of these sequelæ but rather to invite discussion as to the best methods of preventing them, for I believe that all will agree with me that these conditions would not be so frequent if careful attention were given to certain principles underlying the treatment of gonorrhea. Treatment that will in any way change the location of the germs from the anterior urethra to deeper structures or cause new areas of disease, should be avoided. Treatment causing destruction of tissues should not be employed. The physician who recognizes the fact that he is dealing with a persistent infection lodged in delicate tissues, and that in attempting to remove the disease he may do injury to those tissues, will be a long way on the road to successful treatment. No application strong enough to injure the tissue should be applied unless it be directly under the control of the operator. No one would think of dividing a stricture without some guide to the limit of the incision. The same rule should apply to injections, irrigations and local applications. Recent methods employed in the treatment of the disease make it necessary that the patient be seen daily. This is an important step in the right direction as it gives the physician an opportunity to take advantage of the first indication of spreading disease or complications before they become fixed. The present method of treatment trains the patient to habits of personal cleanliness by carefully cleansing external parts before taking his treatment. This with irrigation or frequent injections of mild solutions gives the patient a better social standing with himself than when he is obliged to seek the seclusion of some barn or alley where he must writhe in agony alone while subjecting himself to the fiery injection of the past. If his physician has given him proper instruction about the disease and the care of it, he becomes interested and in a majority of cases will follow the course prescribed until cured.

The urethroscope has in a measure taken the place of applicators and the deep urethral syringe. Just now it is a fad in the treatment of the urethra and may do harm by frequent and improper use. It no doubt has a very important place to fill in the treatment of chronic cases and may be of service in hastening repair which means less scar tissue and less stricture. This calls to mind the fact that strictures are frequently caused by attempts to cure strictures that do not exist. In chronic urethritis wherein the tissues are simply infiltrated and there is swelling of the tissues that narrows the canal until a bulb sound or the urethrometer hesitates at a certain point, a thoughtless or inexperienced operator will decide that he has a stricture to deal with and begins to dilate. The result may be injury and destruction of inflamed tissues with the formation of a well-marked stricture where none should have been found if a little more care had been exercised.

The spread of the disease to deeper parts may be brought about by improper use of injections and improper instrumentation. The latter refers rather to the use of instruments at a time when they are contraindicated, though they may also be handled so roughly that the delicate mucous membrane will be wounded, thus opening up a new point of infection. The presence of stricture frequently means disease of the whole or a part of the genitourinary tract which lies behind it. This may be simple vesicle irritation, pain in the testicles, or permanent changes in the bladder or kidneys. Just behind the stricture may be lodged infection, a slightly ulcerated point ready to yield to the slightest pressure of the instrument and open an avenue for the spread of infection which may prove fatal in a few days. The instrument may carry the infection from the vicinity of the stricture to the vesical neck, infecting a new point and starting an acute inflammation of a severe type and great danger. Epididymitis may follow the treatment of stricture by the rapid spreading of the inflammation excited, or by conveying germs to the mouths of the ejaculatorv ducts by bougies or catheters. Local abscesses may form terminating in fistulæ. The most careful cleansing of the urethra and instruments should therefore precede the treatment of stricture, even in those cases wherein no perceptible discharge is present. One writer states that "gonorrheal cystitis is due to mixed infection in which the gonococcus plays an insignificant part." This may in part be true when the cystitis is well developed and instruments have frequently been introduced, but the germ took a very active part in the process that produced the conditions leading to cystitis. Fortunately cystitis rarely occurs during the acute stage, as there is no necessity for passing instruments into the bladder, thus running the risk of injuring the membrane and opening a new field for infection. Cystitis may follow gonorrhea because of the presence of stricture and infection, or because of stricture, infection and instrumentation, or instrumentation without stricture. A cystitis that practically defied treatment for a long time, on examination revealed a slight stricture. When the stricture was treated the cystitis was easily cured.

Pyelitis and pyonephritis are the most serious sequelæ with which physicians have to deal because they in time prove fatal. The success of

KELLY in the cure of gonorrheal ureteritis and pyelitis in the female can hardly be expected in the male. The changes which take place in the ureters when invaded by infection quickly affect the kidney, and some form of nephritis is sure to follow which will ultimately result in death. Cystitis should be cured before such a serious condition has been reached. It is the duty of the physician to place all the possibilities before his patient when he comes to him with gonorrhea. He may plead ignorance in contracting the disease but he should approach the complications and sequelæ with his eyes wide open.

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TREATMENT OF ACUTE SPECIFIC URETHRITIS.*

BY RALPH H. SPENCER, M. D., GRAND RAPIDS, MICHIGAN.

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NEARLY all writers on the treatment of gonorrhea begin by saying something about the abortive treatment. Theoretically the abortive treatment of gonorrhea is the ideal treatment, but unfortunately under my management it has been a dismal failure. Many good authorities yet maintain that if the patient is examined in the first stages of the disease it may be aborted by the use of a strong solution of nitrate of silver applied thoroughly to the first inch and one-half of the urethra. I have tried this plan several times on patients seen within three days after infection, when the symptoms were only manifested by slight irritation of the meatus and a very scant watery discharge, the patient presenting some imperative reason for prompt cure, but it has thus far proven an utter failure. Instead of aborting, it has seemed to be a cause of prolonging the attack, and as it is intended to create acute inflammation it greatly increases the patient's discomfort. Having had the experience related, and wishing to draw only from what I have learned from observation in my own practice, I will dismiss further comment on this disappointing plan of treatment, calling your attention to some of the more recently proposed plans which, though not abortive, do in most instances lessen the time required to relieve and cure gonorrhea.

I believe copious irrigation of the urethra with dilute antiseptic solutions to be one of the most valuable means of curing a urethritis, that has been proposed in many years. The apparatus for using this treatment is simple, and no doubt you all are familiar with it, so I will speak of only that which I have had the best success in employing as an irrigating fluid. I have used bichlorid of mercury, one to twenty thousand added to normal salt solution, and though it does good, most of the patients on whom I have tried it complain of an irritation and a burning sensation for some time after its use. Permanganate of potash, used in the strength of one to six thousand, as hot as can be borne (the strength may be increased to one to two thousand), is not irritant and causes rapid improvement in both anterior and deep urethritis. Solutions of permanganate of potash cause slight edema of the urethra, which may be noticed by pouting of the mucous membrane at the meatus. This edematous condition renders the surface infected a less favorable culture ground for the development of microbes. Hence it will be seen that the irrigation should be repeated sufficiently to maintain the edema previously alluded to.

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*Read by title before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

I have used permanganate of potash treatment in many cases and found it generally beneficial but I can remember one case in which I was obliged to discontinue its use on account of prolonged pain and inflammatory reaction.

Among the more recent local remedies, may be mentioned mercurol. I have used this in but one case. In that instance the results obtained were not sufficient to induce me to try it again. I have observed in recent literature on the subject that argonin is highly recommended. I have not used it, so I am unable to comment on its value. In three recent cases of gonorrhea in the male and one in the female I have used the new silver proteid compound, protargol. It is not manufactured in the United States, but imported from Elberfeld, Germany, and is patented in the United States, being protected by registered trade-mark. With this preparation I have had such uniformly brilliant results that I have decided it to be an efficient antigonorrheal remedy, and henceforth I shall feel much more confidence in its employment to quickly cure this disease. The three cases in the males alluded to were practically cured within two weeks, the disease never having extended to the posterior urethra. Fortunately all were seen within four days after infection, and all were so situated that they were able to come daily to my office, where I gave the anterior urethra copious irrigation with one-half of one per cent. protargol solution.

The Valentine apparatus was used, the funnel having been elevated about two feet above the pubes, the nozzle being alternately pressed up to, and removed from the meatus, so as to thoroughly cleanse the first two inches of the urethra, without danger of forcing the solution into the deep urethra. The patients were also supplied with a solution of the same strength and a four-drachm syringe, being directed to use it two or three times between the visits to my office. I also directed them to retain a syringeful in the urethra for five minutes. One of these patients, whose home was in Chicago, consented to stay in the city one week for treatment, and, having the leisure, came to my office twice daily for the irrigation. This case, which at first examination seemed to be a malignant infection, improved so rapidly that at the end of a week, when the patient was obliged to leave the city, there was practically no discharge. He was directed to continue the irrigation for a week longer, and provided with an irrigating bag, together with protargol in powders for making the solution of proper strength. I have heard from him once since his return and he reports himself cured.

One of the three cases here reported was a married man, and before he was aware of having gonorrhea he had infected his wife. I also treated her. When I first examined this patient the os uteri, urethra and labia minora were infected. I had the vagina irrigated three times a day with protargol solution, and made local applications of ten per cent. ichthyol and glycerin to the parts infected. Between treatments the patient kept pledgets of absorbent cotton, saturated with tincture of opium and dilute lead water, between the labiæ, thus absorbing the pus discharged and relieving the local irritation, The patient did well, the infection not having reached the endometrium or tubes, and was cured in about two weeks, a result much to be desired.

I have not said anything about the internal medications, and in fact very little was used. Gonorrhea is a local disease and must be treated largely as such. With a view to rendering the urine neutral, or faintly alkaline, twenty grains of citrate of potash in a half glass of water were given every four hours. This increases the flow of urine and incidentally dilutes it. As the acute urethritis began to subside, five-grain tablets of salol were given every four hours. This with the usual regulation of diet and habits of life were the only remedies used.

Thus far it will be noticed that I have only spoken of cases examined in the beginning which were treated often and thoroughly. Right here I wish to emphasize the fact that I believe it to be the duty of the physician to impress upon the mind of his gonorrheal patient the necessity for strenuous treatment to prevent the too frequent and harmful complications, such as chronic deep urethritis, followed by stricture, cystitis, orchitis, gonorrheal rheumatism, et cetera. If the patients understand that there is a prospect of prompt relief, most of them will come willingly to the office for treatment. The old plan of giving the patient something to take and a bottle of wash, without seeing him again for days or weeks, and finally having him pass under the treatment of another physician, perhaps to go through the same routine, has, in my opinion, been the cause of endless complications and sequelæ which might have been averted had more energetic measures been used early in the case.

The more I see of the baneful results of gonorrhea in both sexes the more I am convinced that as compared to syphilis gonorrhea is doing the most harm to mankind, mainly because it is much more general. In cities it is rare to find a man of twenty-five who has not at some time had the disease, and still more unfortunate is the fact that there are many men and women whose urethra or vagina is seldom if ever free from the gonococcus first described by NEISSER.

REPAIR OF THE VAGINAL OUTLET AT THE TIME OF LABOR.*

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MY object in presenting this paper is to plead for greater caution in caring for lacerations of the vaginal outlet at the time of labor. The habit of examining as a matter of routine, the perineum of every patient at the end of labor has become quite well fixed among members of the profession, and yet the restoration of the parts is often done in a careless, slovenly way that not only fails to accomplish the object sought, but in some cases actually does more harm than good.

The parturient canal has been aptly compared to two funnels, one set within the other, the upper one represented by the cervix, the lower by the vagina, and the surrounding structures which constitute the pelvic floor. In passing the narrowest part of either of these funnels, a laceration is liable to occur, due to the relatively large size of the presenting part or a lack of elasticity in the surrounding structures and perhaps both. I shall deal in this paper with but one of these funnels, namely, the lower one, which is of greater surgical importance in labor. The principal supporting structure at the pelvic outlet is the levator ani muscles. The pelvic fascia and the transverse perineal muscles are also of some importance and should be restored when torn. One idea seems very prevalent among members of the profession, which I think, in the light of recent experience, needs modifying, namely, that when a patient is found suffering from the evil results of a relaxed outlet, the physician who has attended her in confinement is frequently held responsible. Much of relaxation may be due not to actual tearing but to an overstretching of the parts which fail to regain their former tone, and consequently very little or nothing is found to repair, and yet the outlet has been distinctly weakened. When the presenting part rests too long in the canal it may produce such a condition. This may be prevented to a certain degree by not allowing the presenting part to remain too long in the lower pelvis. I believe it forms in itself a distinct indication for the use of the forceps. Doubtless, too, a large number of lacerations are subcutaneous or submucous and beyond immediate surgical interference. Again, the relaxed outlet may be due to multiple labors, at each one of which the condition is made a little worse either by slight tearing or overdistension, conditions which would be met with great difficulty by the attending physician. His responsibility, however, is great when the soft parts are actually torn and he should give the matter his most careful consideration.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting

To examine a perineum, the parts should be exposed to a strong light, the fingers of the left hand should separate the labiæ and after cleaning away the blood, two fingers of the right hand should be introduced within the outlet and should draw downward and outward the parts, exposing the posterior wall for some distance above the fourchette. If blood still obscures the field, a gauze pack should be placed in the vagina to keep it clear. In this way not only the perineum itself but the two lateral angles, the fibers and fascia of the levator ani muscles, so important to the integrity of the pelvic floor, are exposed and examined. If the parts are found lacerated, the physician should at once proceed to repair the damage. That perfect surgical cleanliness as obtained by soap and water and the ordinary means used in any operation, should be strictly observed, will at once be appreciated. It should be borne in mind that the field within the vagina at this time is sterile and needs no cleansing. What I wish to especially bring out is the necessity of fully exposing the parts and seeing what one is about. The patient should be turned across the bed, an anesthetic should be given when it can be done (though this is not absolutely necessary), the parts well exposed and the field kept clear of blood by placing a piece of aseptic gauze in the vagina above the laceration. The edges of the mucous membrane should be carefully determined. Lacerations which involve the angles are the most serious and should receive strict attention. Silkworm-gut is a convenient suture material to use. It is easily made aseptic and easily removed. Catgut macerates rapidly on account of the abundant lochia and forms a nidus for infection. The needle should proceed from the vaginal surface whenever the angles are torn and there should be a sufficient number of stitches to insure good coaptation of the parts. They should reach the bottom of the wound to prevent dead spaces and should not be tied so tightly as to cut through the softened tissues. Great care should be taken not to turn in the edges of the mucous membrane. The outside stitches should proceed of course from the skin, the same rules being observed as on the inside. When the sphincter is torn through, it should be brought together by one or two sutures of silkworm-gut. Great care should be taken to make the coaptation accurate. If the tear involves the rectal wall, the upper angle of rectal mucous membrane should either be brought down and stitched to the edge of the anal opening, shutting off the rectum completely from the field, or if that is impossible, the rectum should be closed with catgut sutures which are passed from the rectal side before closing the rent from the vaginal side. The practice of placing a finger in the rectum during an operation, as was at one time largely followed, is unsurgical and should be condemned. I am in the habit of ordering a douche of sterile water whenever there has been any suturing done. The sutures are usually removed at the end of a week. However, these are matters which each operator determines according to his custom. I wish to emphasize the necessity of the entire exposure of the parts and the taking of as great care in placing the stitches as in a secondary operation.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, FEBRUARY 20, 1901.

THE PRESIDENT, CHARLES T. McCLINTOCK, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

REPORTS OF CASES.

PRACTICE OF LOUIS J. HIRSCHMAN, M. D., DETROIT.

PHELP'S OPERATION FOR THE RADICAL CURE OF HERNIA.

THIS patient, who has kindly consented to appear before you this evening, was referred to me October 21, 1900, with a diagnosis of irreducible right inguinal hernia. He gave a history of injury two years ago, by lifting a heavy weight and "feeling something give way." He also stated that he had worn a truss from that date until three months prior to consulting me, at which time it commenced to irritate him so that he was compelled to dispense with it. The pain and irritation increased so that he was obliged to give up work. He consulted several physicians at his home in the country and here in the city and their attempts at reduction, both with and without anesthesia, were futile. Upon examination I found a firm mass, the size of a large orange, in the right side of the scrotum and involving the right testicle and narrowing abruptly to the external ring where it was held fast. All attempts at reduction, or partial reduction, were futile and an operation was advised and agreed upon. On the morning of October 22, I operated at Saint Mary's Hospital, with the patient under chloroform anesthesia, which was preceeded as usual by the administration of fifteen grains of chloretone, a half hour before operation to prevent nausea and lessen the amount of anesthetic required. The operation of choice was that devised by DOCTOR A. M. PHELPS, of New York, and demonstrated by him in Detroit in 1897, and I now report its successful performance, for the first time in this city since its introduction by DOCTOR PHELPS. The incisions through skin, fascia, and muscles down to the canal, were an inch above Poupart's ligament and extended from an inch above the external ring to the symphysis pubis. The inguinal canal being exposed, I opened it and found both cord and omentum densely adherent to the sac. Upon incising the external ring, I was able, after carefully breaking up the adhesions, to remove a large mass of omental tissue, which completely surrounded the right testicle. The testicle was readily extricated and being uninjured was returned to the scrotum. The omental mass was ligated and cut away and the healthy omentum returned to the peritoneal cavity. The sac was cut away and the peritoneum sewed together as in any laparotomy except that a continuous suture of the finest gauge of pure silver wire was used. The transversalis fascia was likewise treated and a mattress of silver wire loops and meshing containing twenty-four yards of silver wire was laid over this tissue, and the deep layer of muscles was stitched over this and quilted in, also with continuous wire suture. Next the superficial muscles and aponeurosis were likewise treated and the cord, which had previously been retracted by an assistant, was allowed to rest directed under the integument, the aponeurosis being notched with a scissors to prevent strangulation. The skin was united with a running suture of silkworm-gut and a dry dressing applied. When the dressing was removed on the eighth day, the suture was withdrawn and it was seen that with the exception of a stitch abcess at the upper end of the wound, it had healed by first intention. This small sinus yielded readily to cauterization with pure carbolic acid followed by alcohol, and daily dressings with balsam Peru. Patient was able to walk about freely on the twenty-first day following the operation. The silver wire, which was thoroughly annealed, becomes encysted and causes no irritation whatever and is allowed to remain *in situ* and forms an impassible barrier to the descent of the bowels or omentum, and although DOCTOR PHELPS has operated on over two hundred and twenty cases since 1892, a recurrence following the operation has yet to be reported.

PRACTICE OF DON. M. CAMPBELL, M. D., DETROIT.

A FOREIGN BODY REMOVED FROM THE EYE BY MAGNET.

THE patient from whose eye was removed this large piece of iron, was violently struck in the left eye by a flying fragment, while using a chisel. The Johnson magnet which I show you was used in its removal. He was brought to my office within two or three hours from the time of the accident. Examination revealed an eye giving all the evidences of a severe injury. The anterior chamber was full of blood, the eyeball somewhat collapsed, and a large, jagged wound was easily seen at the corneoscleral margin, extending about one-third around the corneal circumference. The presence of a retained foreign body was suspected but nothing of it could be seen either by focal illumination or by the ophthalmoscope, nor could it be found by careful probing through the wound with a sterilized probe. Still, being morally certain that a foreign body, probably a piece of iron, was within the eyeball, I carefully introduced one of the small tips of the magnet into the interior of the eye through the original wound, but failed to find the missile. I then screwed on this large bulbous end and brought it in contact with the lips of the wound when I was rewarded by seeing a piece of iron suddenly appear in the wound orifice from which situation it was carefully removed by forceps without any difficulty. While it is impossible in this case to save much vision on account of the great damage done by so large a missile, the eyeball will probably be retained and will be vastly superior to an artificial eye. I show you herewith the large piece of iron withdrawn and also the magnet with which the work was accomplished. The immediate removal of a piece of iron or steel from the interior of the eye is obviously a very desirable thing to be accomplished, firstly, because it gives a much better chance for recovery of the wounded organ; and secondly, because it is much easier to remove if it can be reached early and before it is surrounded by inflammatory lymph which is soon thrown out and envelopes the offending substance firmly, making its removal difficult. One trouble with the magnets heretofore available for this work has been that they are run by means of a battery, which is always an uncertain quantity not only as to the amount of current available, but often at the critical moment they give out entirely. This magnet, known as the Johnston, runs by attaching to the ordinary electric light fixture of the Edison one hundred and ten volt circuit, is strong enough for all practical purposes and always ready for use, no intervening apparatus being necessary.

PRACTICE OF ANGUS MCLEAN, M. D., DETROIT.

AN ANEURYSM OF TRAUMATIC ORIGIN.

The speciman I here present is an aneurysmal sac of the fusiform or tubular variety of traumatic origin. It was removed from the lower extremity, femoral region, of a patient one week ago today. History: About a year ago patient was out hunting and was accidentally shot through the thigh. The bullet entered the inner surface and went downward and outward, passing beneath the femur, and made its exit at a point opposite the junction of the middle and lower thirds. The wounds were dressed in the usual manner and soon healed. He noticed an enlargement on the inner aspect of the thigh soon afterward, and as it gradually increased he consulted his physician, Doctor A. A. Parisot, of Mount Clemens, Michigan. It was diagnosed as an aneurysm and the Doctor advised compression. Patient seemed to improve for a time, but as a consequence of the constriction necessary for the compression there was considerable obstruction to the return circulation and edema of the limb below this point followed. He desired that radical measures be instituted, and his physician referred him to me for operation. There was no doubt as to the diagnosis, for all the pathognomonic symptoms of aneurysm were present. On dissecting it out it was found to be an aneurysm of the anastomotica magna close to the femoral. I tried to ligate between this and the main artery but the walls of the artery had become fragile and the ligature cut through, necessitating the ligation of the femoral artery above and below this point. The distal portion of the anastomotic branch was also ligated and the aneurysmal sac removed. Collateral circulation was well established in six hours, excepting in the great toe and plantar surface of the foot at the base of the large toe. He complained of severe pain and numbness of this portion of the foot shortly after the operation. There was evidently an embolism of the terminal point of the plantar artery. The toe was very pale at first, then became blue. Heat was continuously applied for a few days and collateral circulation was attained. I think the embolus was formed at the base of the aneurysm, while we were attempting to close the opening by lateral sutures for the stump was too close for circular ligation. I was unsuccessful in this and was compelled to ligate the femoral. I believe the embolus passed down the main artery before it was ligated for it would probably have been lodged in the collateral circulation of the popliteal region if it had become detached after the ligation of the femoral. The patient is here and I will present him to the society to show what a satisfactory collateral circulation can be established in so short a time.

PRACTICE OF D. E. HILLS, M. D., DETROIT.

ANEURYSM OF ASCENDING AND TRANSVERSE AORTA; HYPERTROPHY AND DILATATION OF HEART; RUPTURE OF ANEURYSM, WITH DEATH THREE HOURS LATER.

A MAN aged sixty. History: A strong effort blowing to clear pipestem at 6 o'clock P. M., was followed by a sudden sharp pain referred to right shoulder, which continued until death at 9 o'clock. Postmortem: Median incision as usual. Abdominal organs covered with thick layers of fat; liver slightly enlarged, somewhat cirrhotic; kidneys small and nodular; spleen small; appendix large, somewhat constricted near cecum; stomach and intestines normal. Lungs adherent over entire area, not consolidated. Some fluid in right pleural cavity; heart much enlarged. Lateral incisions to points of shoulders; clavicles sawed and thoracic viscera removed entirely; pericardium freed from surrounding tissues. Pericardium adherent over entire area, much gelatinous matter, large blood clot at upper portion. Aortic aneurysm ruptured into pericardium, rupture two and five-eighths inches in length.

Heart:	Weight, ...	32 ounce.
	Circumference, . . .	12¼ inches.
	Length, ...	7⅝ "
	Diameter, ...	4¾ "
	Long circumference, . .	18½ "
	Aneurysm diameter, . .	4 3-16 "

Large organized blood clot in aneurysmal sac.

PRACTICE OF WILLIAM F. METCALF, M. D., DETROIT.

A CASE OF APPENDICITIS.

A WOMAN aged thirty years had an attack of appendicitis three years ago. On the morning of December 30 she was again taken with severe pains in the region of the appendix, very similar to those which inaugurated the first attack, but more severe. The woman vomited occasionally, but retained enough saline physic to produce several free movements of the bowels. I saw her in consultation last Monday and advised immediate operation for the following reasons: Notwithstanding the fact that forty-eight hours had elapsed since the onset, and that the bowels had been freely emptied, the temperature was gradually rising and the pulse becoming more rapid, showing increased tension; the tongue was dry, the pain severe, and the rigidity of the abdominal muscles marked. The patient was at once transferred to Harper Hospital where I relieved her of this appendix which measures four inches long and two inches in circumference, being filled with pus and almost separated from the cecum. There was no wall separating it from the general peritoneal cavity, and I think that delay until morning would have cost the woman her life. The proper time to operate in this case was when the woman had completely recovered from the first attack. If this course were adopted we would have, under proper conditions, one hundred per cent. of recoveries.

AN ABDOMINAL HYSTERECTOMY.

SPECIMEN number two is a uterus and its appendages, which were removed last Tuesday, and I think the case of enough importance to warrant a careful report. The patient is twenty-seven years of age and enjoyed good health until her menses began at twelve years of age. The symptoms which then appeared were those of obstructive dysmenorrhea, accompanied by excessive flow, lasting a week; also headache and constipation. She was married at nineteen and has four children, the youngest having been born last September. During the last month of this pregnancy she became infected with the gonococcus. I saw her for the first time about three weeks after delivery, when tympanites was marked, the abdomen being as large as in a full-term pregnancy and exceedingly tender. Subinvolution was marked and the temperature ranged from normal to 103° with sudden variations. I disinfected and drained the uterus thoroughly. When the single vulsellum penetrated the cervix the bleeding was so profuse that I had to surround the point by a stitch. The tympanites now disappeared for a few days to reappear with the same distressing symptoms. Rest in bed for three or four days, with turpentine enemata to favor expulsion of gas gave relief, but as soon as she began to move about the former symptoms reoccurred. This history repeated itself continuously until she entered the hospital, where I examined her two days previous to operation, finding the tympanites so great as to embarrass respiration, while the pain and tenderness in the abdomen were so marked as to prevent examination. Her expression was that of a patient suffering with peritonitis, but the temperature was normal. Hypodermic injections of morphin and large enemata of the powdered extract of oxgall relieved the tympanites, at which time I was enabled to determine the presence of metritis and of adhesions around the uterine appendages. This together with the history of infection entering during pregnancy and the negative result of curetment was the warrant for giving an anesthetic with a view to possible hysterectomy. I found the cervix so friable as to render the holding of it down with vulsella or forceps difficult, but in passing a large sound through the patulous os to measure the uterine cavity it entered without force directly through the fundus into the abdominal cavity. This cyst, which is the size of a small egg, was dissected from beneath the anterior vaginal wall, lying against the urethra. To control the hemorrhage from the cavity from which the cyst had been dissected, it was found necessary to approximate the tissues with sutures, and a packing of gauze held firmly there by a retractor while the hysterectomy was being done, failed to cause clotting of the blood. Arteries and veins as large as the ulnar were found in the vaginal wall anterior and posterior to the cervix, but more than that, the tissues were permeated everywhere with enlarged vessels, and the blood showed no tendency whatever to clot. There is no family history of hemophilia in the present generation, but all her sisters flow excessively. The patient knew nothing of her ancestors, and there is no evidence of tuberculosis or syphilis. Today she is feeling perfectly well and does not understand why she needs to be kept in bed.

VAGINAL HYSTERECTOMY.

SPECIMEN number three was removed the next day, Wednesday, from a very fleshy woman, aged thirty-four years, presenting the following history: Patient was married fourteen years ago and has had six children, the oldest being thirteen years and the youngest two years of age. Following the first confinement she was in bed with fever for about two months and did not recover for nearly a year. During the past year she had suffered especially from pain in the right ovarian region, but also across the whole pelvis, frequent micturition, headaches, profuse leucorrhea, the discharge being of strong necrotic odor. There had been extensive laceration of the perineum with large rectocele and systocele. Her sister died of cancer of the uterus and her mother was subjected to hysterectomy for the same condition. An examination showed the uterine body abnormally hard, large and its cavity measuring four and three-fourths inches, being extremely tender. There was also prolapse of both ovaries and tubes with some adhesions. Two courses of treatment were to be considered; first, to have a microscopic examination made of the curetings and of a section of the cervix for determining the question of malignancy, and then, if this question were decided in the negative, to do thorough curettment, trachelorrhaphy, both anterior and posterior colporrhaphy, and abdominal section to free the adhesions, and anterior fixation; or second, to perform vaginal hysterectomy. I advised and performed the latter for the following reasons: A septic process had been working in the uterus for thirteen years and the organ was large and abnormally hard. A microscopic examination subsequently showed excessive development of fibrous tissue. The abdominal wall was immensely thick and pendûlous. The dislocation of the uterine appendages and their extreme sensitiveness made their restoration to health very doubtful. An anterior and posterior colporrhaphy were performed and a large ulcerated hemorrhoid was removed at the same time. The temperature and pulse are normal today, all wounds healing by first intention, while the patient is feeling perfectly well.

REMOVAL OF POLYP AND UTERUS.

SPECIMEN number four was removed on Thursday, from a patient thirty-seven years of age. The woman says she was well until a year ago except for headaches and constipation. She has two children. One year ago she had a miscarriage, after which there was excessive flowing and she was taken to the hospital by her attending physician, who administered chloroform three times, making an effort each time to replace what he thought was an inverted uterus. This he failed to do, however, and sent her home with the understanding that nothing could be done to relieve her, that she was too weak to take an anesthetic. The woman remained at home in despair for three monhs. As you see, it was not an inverted uterus, but a polyp as large as a normal uterus arising from the fundus of the uterus and being extruded from its cavity. My reasons for not trying to save the uterus in this case are: first, the extreme anemia of the patient, and the condition of the uterus after removal of tumor would have tended to permit excessive flow; second, she had suffered considerable pain in the ovaries, which are undergoing fibrocystic change; third, adhesion of left tube; and fourth, the patient's general debility.

REMOVAL OF CORPUS UTERI, APPENDAGES AND VERMIFORM APPENDIX.

SPECIMEN number five I removed today from a patient fifty years of age. The woman was married twenty-five years ago, but has no children and has not been in good health since a miscarriage twenty-three years ago. Twelve years ago she had an attack of general peritonitis, originating in the pelvis. Another attack three years ago was more severe during which time an abscess formed in the pelvis and discharged through the bowel. Another attack came on one year ago which she said discharged through the bladder, but when operating I found no trace of this having occurred. Her present symptoms are insomnia, constipation, indigestion, and pain in the top of the head. The patient tires easily and is abnormally forgetful. She is tender all over the abdomen, but especially so over the corpus uteri and appendages. Palpation showed adhesions present. Through abdominal incision I found no line of cleavage between the pelvic organs; all were shrouded in fibrous adhesions which could not be broken, and a tedious dissection was necessary to free the organs. There was an abscess in the broad ligament on the left side, to which the colon was attached. I removed the corpus uteri (dilating and cureting the cervix), the uterine appendages, and the vermiform appendix. The patient's temperature tonight is 99.2° and the pulse 96.

DETROIT ACADEMY OF MEDICINE.

STATED MEETING, MARCH 12, 1901.

THE PRESIDENT, ARTHUR D. HOLMES, M. D., IN THE CHAIR.
REPORTED BY HARRISON D. JENKS, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR FREDERICK W. ROBBINS read a paper entitled "Syphilitic Onychia." (See page 306.)

DOCTOR BIDDLE: While in general I agree with DOCTOR ROBBINS, I believe in the early use of mercury—as soon as the diagnosis is made. Onychia is rare. There is a difference between onychia and paronychia. Onychia is inflammation of the nails in the early stages of syphilis, while paronychia, especially the ulcerative form, is a late manifestation and requires the use of the iodides. There can be a simple onychia from any form of malnutrition, but the syphilitic is of longer duration. The simple form is found chiefly in children.

DOCTOR TIBBALS: I am glad to have heard the paper read and to have noticed another diagnostic point brought out. I have never seen the nails affected. I believe we should have a positive diagnosis before we begin to treat a patient. There are too many wrong diagnoses by unprincipled men. We can seldom make a diagnosis from the initial lesion alone.

DOTCOR EMERSON: I was taught that onychia is a common accident of syphilis, but I have been looking for it for twenty-five years and have not seen a case of it. I have seen onychia several times but not the syphilitic form.

EDITORIAL ARTICLES.

PROFESSOR KOCH'S VIEWS CONCERNING TUBERCULOSIS.

THE opinion of any eminent authority on the important question of tuberculosis commands attention widely in these days of the so-called crusade against the dread white plague, and of all students of this subject perhaps no one is more gladly given attention than PROFESSOR

ROBERT KOCH. The occasion of his visit to the British Congress on Tuberculosis was an event in medical circles, and the presentation of a pertinent paper by him set the whole world agog. Curiously enough, however, little that he presented could be regarded as original, and practically the only point to call for comment pertains to man's susceptibility to bovine tuberculosis. Human and bovine tuberculosis he regards as different and maintained that the former could not be transmitted to cattle. On the other hand he felt free to state also that infection of human beings with bovine tuberculosis is also a rare occurrence and the extent of it hardly greater than that of hereditary transmission. To the extent of those observations many students of this subject will agree with him, but he added further that concerning infection of human beings with bovine tuberculosis, he did not deem it advisable to take any measure against it. As this view is contrary to the generally accepted opinion and even against the present practice of the civil authorities, and inasmuch as it was in the main an assumption and not substantiated by sufficient scientific data, it should be regarded only as the opinion of one man. Surely those who inspected the samples of diseased meat exhibited at the Battle Creek meeting of the Michigan State Medical Society would scarcely feel like subscribing to such a dictum even under so eminent authority.

In other respects PROFESSOR KOCH's address was a broad-minded presentation of the known facts of the subject. Sputum he considers the main source of infection, and the arc completing the so-called vicious circle. He looks with favor upon the hospital care of consumptives, sanatoria, notification, disinfection, and especially the instruction of the people. He fully believes the development of preventive medical science will ultimately result in a victorious issue.

ANNOTATIONS.

A NEWLY DISCOVERED DISEASE.

IT must have occurred to many observers that the lines of demarcation between some of the eruptive diseases are still imperfectly drawn, and that to this fact is due the confusion which arises in connection with their diagnosis and treatment. CLEMENT DUKES is one of these close observers, but he has not only become aware of the imperfection of our knowledge of these diseases, but also been able to point out certain distinctions which seem to make possible one more step to a more perfect classification. As physician to the Rugby School and Hospital he has watched the varying manifestations usually ascribed to roseola, measles and scarlet fever, and in the comparison seemed to discover another entirely distinct affection. To this disease he has given the name of the

"Fourth Disease." In *The Lancet* he has given at length a description of this affection and given it an entity as distinct as any of the eruptive fevers. He has seen it preceded and followed by them and considers it neither protective from nor protected by the others. The premonitory symptoms vary from none to severe. It appears usually in spring and summer. The incubation period varies from nine to twenty-one days. The rash, which is usually the first symptom, may resemble either measles or scarlet fever. Desquamation may be slight or considerable. The temperature may vary from normal to 104° Fahrenheit, and the pulse correspondingly. It usually subsides in a fortnight and there are practically no sequelæ. "Progressive Medicine" in commenting upon this subject refers to the confirmation of DUKE's conclusion by BROADBENT, RUTTER, and JOHNSTONE in *The Lancet* for July 28, 1900.

UREINE.

THIS is said to be a product resulting from the slow evaporation of urine, admixture with nitrate of silver, filtering and the evaporation of the filtrate. Its discovery is reported in the "International Clinics" as having been announced by OVID MOOR to the Thirteenth International Medical Congress. It is supposed to be the principal organic constituent of urine, more abundant than urea and the source of so-called uremia. It is described as having a pale yellowish color, a slightly bitter taste, a specific gravity of about one thousand two hundred and seventy, a feel as of a fatty substance and is freely miscible in water and alcohol in all proportions. It is believed to hold the peculiar odor of urine and has a remarkable faculty for taking up oxygen.

CONTEMPORARY.

THE BACTERIOLOGY OF GASTROENTERITIS.

[ARCHIVES OF PEDIATRICS.]

WHILE writers of one hundred years ago attributed an infectious origin to cholera infantum, and compared it to the remitting fevers caused by marsh miasm, the impulse to the bacteriologic investigation of summer diarrhea was not given until ESCHERICH, in 1886, published his work on the intestinal bacteria of infants and their relation to the physiology of digestion. The first bacteriologic examination of stools during an epidemic of diarrhea was made by LESAGE and HAYEM in 1888. BAGINSKY's work followed, but the most important and exhaustive studies were made by BOOKER from 1886 to 1897. As the result of these he called attention to three principal forms of summer diarrhea, based upon a correspondence of their clinic, anatomic and bacteriologic features: (1) dyspeptic or noninflammatory diarrhea, in which the obligatory milk-feces bacteria are found, chiefly the bacillus coli communis, the bacillus lactis aerogenes appearing in smaller numbers; (2) streptococcus gastroenteritis, in which there is a general infection and ulceration of the intestine, with streptococci as the predominating forms, some bacilli being present as well; (3) bacillary gastroenteritis, charcterized by a general toxic condition with less intestinal inflammation, and the presence in the stools of several varieties of bacilli, the proteus vulgaris being the most common. ESCHERICH studied the streptococcus cases more closely (1897–1899) and found the cocci numerous and in almost pure culture in the stools in acute, severe cases, while it was possible to isolate them from the urine and the blood during life and from the viscera after death. The cocci occur in pairs or very short chains and resembled the pneumococcus or the meningococcus more closely than they do the ordinary streptococcus. Clinically the symptoms vary much in the mild and in the severe cases; the stools may be watery or contain much pus and blood. Staphylococci have also been found in diarrheal stools, but much less frequently than streptococci.

Later (1899) ESCHERICH described cases of dysentery (with croupous inflammation of the colon) due to a virulent colon bacillus, and designated the affection coli-colitis contagiosa. VALAGUSSA (1900) studied an epidemic of dysentery among children in which he found a bacillus belonging to the colon group and identical with that isolated by CELLI and FIOCCA from cases in Italy and Egypt. It was present in the stools in almost pure culture and gave a specific agglutinating reaction with the blood of patients ill with the disease. In 1898 SHIGA, in Japan, described the bacillus dysenteriæ, an organism more nearly related to the typhoid than to the colon group; and FLEXNER found the same bacillus in one form of acute dysentery studied in Manila. Both CELLI and ESCHERICH tried to identify the bacillus they described with that of SHIGA. The bacillus pyocyaneus has also been found in the stools of cases of epidemic infantile dysentery.

It is evident, then, that no specific bacterium of gastroenteritis has been found; that there is one form in which the streptococcus is the predominating organism; and that the bacillus dysenteriæ may possibly be proven to be the cause of epidemic dysentery both in children and in adults.

MEDICAL NEWS.

THE PUT-IN-BAY MEDICAL MEETING.

THE Mississippi Valley Medical Association, the second largest medical body in the United States, will hold its next meeting in Hotel Victory, Put-in-Bay Island, Lake Erie, Ohio, on the 12th, 13th and 14th of September, under the presidency of Doctor A. H. Cordier, of Kansas

City. The preliminary program announces forty-five papers by as many physicians, some of whom are located beyond the confines of the Mississippi Valley. Several Detroit physicians are listed to participate in the meeting. The address in Medicine will be delivered by Doctor Frank Billings, of Chicago; that in Surgery by Doctor Reginald Sayre, of New York City. The annual banquet will be held on the evening of the first day; the reading of several papers with stereopticon exhibits and demonstrations will occupy the evening of the second day; while the president's address and the annual orations will be delivered on the three mornings of the meeting. A rate of one cent a mile is offered for the round trip. The secretary of the association is Doctor Henry E. Tuley, of Louisville, Kentucky.

MINOR INTELLIGENCE.

THE Dallas Medical College has been absorbed by the Trinity University of Texas, and will hereafter be known as the medical department of that institution.

THE Long Island College Hospital will erect a new building to replace the main structure of that institution. It will cost $175,000, over two-thirds of which amount has already been secured.

THE American Medical Missionary College, of Chicago, will erect a new hospital and college building to cost $100,000. The site that will probably be selected is in the vicinity of Cook County Hospital.

THE following officers are in charge of the Grand Rapids Academy of Medicine for the current year: President, Doctor Hugo Lupinski; vice-president, Doctor Henry Hulst; secretary, Doctor John R. Rogers; treasurer, Doctor Earl Bigham.

DOCTOR S. WIER MITCHELL, of Philadelphia, who is now traveling abroad, was recently entertained by the medical profession of Tokio and Yokohama at a reception given in honor of the distinguished physician at the Maple Club, Shiba Park.

THE Jackson County Medical Society held its quarterly meeting at Castle Hall, Jackson, Michigan, Tuesday, July 9, 1901. The program promised papers from Doctors Lewis, Main and Roberts of Jackson; Hubbard, of Parma; and Vaughan of Ann Arbor.

WOMEN will henceforth be admitted as students to Rush Medical College, the recently made medical school of the University of Chicago. Only the two lower classes will be allowed to enter at present, but next year accommodation will be made for the two higher classes.

DOCTOR NIELS FINSEN, of Copenhagen, has expressed the belief that greater results can be accomplished in the treatment of certain diseases by the application of sunlight than by x-rays, lupus and ulcers being especially mentioned as ailments amenable to the phototherapeutic innovation of which the doctor is the originator.

GERMANY has a society devoted to the study of medical history. It was organized as a consequence of the abolition of a section of the Association of German Scientists and Medical Practitioners, which had a similar object for its purpose. Its promoters were Doctors Kahlbaum, of Basel; Pagel, of Berlin; and Sudhöff, of Hochdahl.

Barney Martin, a native of County Cavan, Ireland, and a man whose claim to have lived in three centuries has been authenticated, recently succumbed to heat prostration in the Borough of Brooklyn, New York, at the age of one hundred and nine years. Deceased came to America seventy-one years ago, and pursued the vocation of cab driver to within a decade of his demise, at which time he was employed as park laborer.

Woandsu is a newly-discovered food plant of the leguminous class. It is indigenous to tropical Africa and is extensively cultivated by the negroes for food purposes. This fruit or nut has recently been analyzed by a French chemist, who found its constituents to be fifty-eight per cent. of starch, nineteen per cent. of nitrogenous matter, six per cent. of hydrocarbon, four per cent. of cellulose, three per cent. of ash, and ten per cent. of water.

The mental depression often coincident with and subsequent to influenza is thought by the health commissioner of Chicago to be an important factor in the causation of suicide, which has greatly increased in that city during the past few years. This conclusion was reached after a careful investigation, and the coroner has been requested to institute special inquiry regarding the possible relation between the germ disease and self-destruction.

The Ontario Medical Association elected the following officers at its recent annual meeting in Toronto: President, Doctor N. A. Powell, of Toronto; vicepresidents, Doctors R. Ferguson, of London, R. W. Garrett, of Kingston, L. C. Prevost, of Ottawa, and J. L. Turnbull, of Clinton; general secretary, Doctor H. C. Parsons, of Toronto; assistant secretary, Doctor George Elliott, of Toronto; treasurer, Doctor A. R. Gordon, of Toronto.

Pope Leo XIII tendered a luncheon to eight guests at the Vatican on July 4, in honor of the physicians who minister to his bodily ills, Doctors Lapponi and Nazzoni. According to report this is the first instance during the reign of the Sovereign Pontiff in which the hospitality of the Vatican table d'hote has been extended to anyone, notwithstanding His Holiness has officiated at the helm of Saint Peter twenty-three years. Surely these medical gentlemen should greatly appreciate the honor. The invited guests occupied a table in the center of the dining room, while Leo functionated as host at a table in the exclusiveness of an alcove window.

The Philippine Commission has established a government biologic and chemic laboratory in the archipelago. The general laboratory and its several branches will be conducted under the superintendency of Professor Paul C. Freer, M. D., of the University of Michigan, who has accepted the position at a salary of four thousand dollars a year. A health board consisting of a commissioner, a sanitary engineer, a chief inspector, a secretary, and a laboratory superintendent, has also been established by the commission. Honorary membership, without the privilege of voting, will be enjoyed in the board by the chief army and navy surgeons and the dean of the medical and pharmaceutical association. The health commissioner will receive a salary of six thousand dollars a year.

A SANITARY CONVENTION will be held under the auspices of the Michigan State Board of Health at Ludington, Thursday and Friday, September 5 and 6, 1901. It will consider (1) Sewerage. (2) Water-supplies. (3) Milk-supplies. (4) Restriction of Communicable Diseases. (5) Restriction and Prevention of Consumption. (6) Hygiene of the Home.

THE medical board of the Lansing Hospital for the quarter embracing July, August, and September, is as follows: Rush J. Shank, M. D., chief of staff; L. Anna Ballard, M. D., secretary. Consulting surgeons: R. C. Mahaney, M. D., Owosso; T. M. Sanford, M. D., De Witt; M. Coad, M. D., Williamston. Attending surgeons: George E. Ranney, M. D., J. A. Post, M. D., C. D. Black, M. D. Consulting Physicians: F. N. Turner, M. D., Webberville; G. B. Wade, M. D., Laingsburg; F. D. Woodworth, M. D., Mason. Attending physicians: E. D. North, M. D., J. H. Wellings, M. D., V. W. Conner, M. D., George L. Garner, M. D., O. A. Tooker, M. D., H. A. Carpenter, M. D. Consulting oculist: David H. Bokhoff, M. D. Attending oculist: C. M. Dickson, M. D. Consulting gynecologists: O. H. Freeland, M. D., Mason; R. H. Nichols, M. D., Onondaga; G. A. Austin, M. D., Laingsburg. Attending gynecologists: H. W. Landon, M. D., C. M. Watson, M. D., Harry A. Haze, M. D. Microscopist, F. N. Williams, M. D. Consulting obstetricians: Edward North, M. D., Holt; N. A. Dryer, M. D., Bath. Attending obstetricians: Cora P. Ganung, M. D., Philo A. Tyler, M. D., S. Gertrude Norris, M. D.

RECENT PUBLICATIONS.

REVIEWS.

ECZEMA.*

THE author of this little book has enjoyed rare opportunities for observing this disease and embodied the results of his studies in a lucid style and comprehensive text.

*By L. Duncan Bulkley, A. M., M. D., of New York. Third edition, entirely rewritten. G. P. Putnam's Son, New York and London, 1901.

TEXT-BOOK UPON THE PATHOGENIC BACTERIA.*

IN the preface the author warns the reader that this work treats of pathogenic bacteria, as the title implies, and not of the whole subject of parasites. No one will be disappointed in its brevity, however, but will find instead a practical and valuable work, full of the information most needed. This, the third edition, brings the subject well up to date.

*By Joseph McFarland, M. D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia. Pages, 621, with 142 illustrations. W. B. Saunders & Company, Philadelphia.

LARYNGEAL PHTHISIS.*

THE less than one hundred pages comprising this work are a faithful reflection of the results of one careful observer and worker. Illustrations are numerous and many are finely colored.

*By Richard Lake, F. R. C. S., Surgeon-Laryngologist at the North London Hospital for Consumption, et cetera. P. Blakiston's Son & Company, Philadelphia, 1901.

INTERNATIONAL CLINICS—VOLUME I, ELEVENTH SERIES.*

THIS volume consists of nineteen valuable articles bearing upon therapeutics, medicine, neurology, surgery, obstetrics and gynecology, diseases of the eye and laboratory methods, and a hundred-page review of the progress of medicine during the year 1900. Although all are deserving of notice, especial mention is made of the new and simple method of sterilizing catgut and sponges and of some practical methods in photomicrography.

*Edited by Henry W. Cattell, A. M., M. D., and several collaborators. J. B. Lippincott Company, Philadelphia, 1901.

DISEASES OF CHILDREN.*

THIS work, though of English authorship, has been adapted to American practice. It is thoroughly comprehensive; the style is clear; the illustrations are numerous and well selected. It is certainly an important addition to the library of this subject.

*By Dawson Williams, M. D., Physician to the East London Hospital for Children. New (second) edition. Specially revised for America by F. S. Churchill, A. B., M. D., Instructor in Diseases of Children, Rush Medical College. In one 8vo volume of 538 pages, with 52 illustrations and 2 colored plates. Cloth, $3.50 net. Lea Brothers & Company, Publishers, Philadelphia and New York.

PERSONAL HYGIENE.*

THE intent and scope of this work can be best understood from the following heads of chapters: Hygiene of the Digestive Apparatus; Hygiene of the Skin and its Appendages; Hygiene of the Vocal and Respiratory Apparatus; Hygiene of the Ear; Hygiene of the Eye; Hygiene of the Brain and Nervous System; Physical Exercise. The contributors include Doctors J. W. Courtney, George Howard Fox, E. Fletcher Ingals, Walter L. Pyle, B. Alexander Randall, G. N. Stewart, and Charles G. Stockton. It is popularly written and should be well received, as there is now a general desire for this kind of knowledge. Physicians also would do well to clarify their ideas on many points by a perusal of this book.

*Edited by Walter L. Pyle, A. M., M. D. Illustrated. W. B. Saunders & Company, Philadelphia.

FRACTURES AND DISLOCATIONS.*

The demand for another new edition of this work so soon must be very gratifying to both author and publishers. It is noticeable, however, that advantage has been taken of the opportunity to make revision and additions of value. It is an authoritative work.

*By Lewis A. Stimson, B. A., M. D., Professor of Surgery in Cornell University Medical College, New York. New (third) edition. In one octavo volume of 842 pages, with 336 engravings and 33 full-page plates. Cloth, $5.00, net. Leather, $6.00, net. Just ready. Lea Brothers & Company, Philadelphia and New York.

HYGIENE AND SANITATION.*

We have noticed this work before in an earlier edition. The brief and practical presentation of the subject commended it to a large number of readers and made possible an early revision. The author has inserted a short chapter on military hygiene and made several other minor changes, thus bringing the work up to date.

*By Seneca Egbert, A. M., M. D., Professor of Hygiene in the Medico-Chirurgical College of Philadelphia. In one handsome 12mo volume of 427 pages with 77 engravings. Cloth, $2.25, net. Lea Brothers & Company, Publishers, Philadelphia and New York.

THE MEDICAL NEWS POCKET FORMULARY.*

Only for the reasons that this book may suggest remedies useful for certain diseases and remind a lapsing memory, do we feel justified in recommending it. It should certainly not be used in any routine manner. As an aid, however, it holds a legitimate place and should prove useful to young practitioners especially.

*By E. Quin Thornton, M. D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. New (third) edition, carefully revised to date of issue. Price, $1.50, net. Lea Brothers & Company, Philadelphia and New York, 1901.

PROGRESSIVE MEDICINE—MARCH, 1901.*

In this volume are contained the latest contributions of note on the surgery of the head, neck, and chest; on infecting diseases, including acute rheumatism, croupous pneumonia and influenza; on the diseases of children; on pathology; on laryngology and rhinology; and on otology. Extended consideration is given to empyema, the breast, and to surgery of the skull and brain, to typhoid fever and to tumors. This volume compares very favorably with the preceding series.

*Edited by Hobart Amory Hare, M. D., assisted by H. R. M. Landis, M. D. Lea Brothers & Company, Philadelphia and New York, 1901.

DIET LISTS AND SICK-ROOM DIETARY.* .

THIS book of detachable diet lists for albuminuria, anemia and debility, constipation, diabetes, diarrhea, dyspepsia, fevers, gout or uric acid diathesis, obesity and tuberculosis, is certainly a great convenience to the busy doctor.

*Compiled by Jerome B. Thomas, Jr., A. B., M. D. Second edition, revised. Published by W. B. Saunders, Philadelphia.

FESTSCHRIFT.*

THIS volume, the first of the kind to be published in this country, worthily honors a worthy man. Much space would be required to even make reference to the many original and important ideas that it contains. Nothing short of a perusal should satisfy. Let the spirit in which it was written, spread and abound.

*International contributions to medical literature in honor of Abraham Jacobi, M. D., LL. D., to commemorate the seventieth anniversary of his birth. The Knickerbocker Press, New York, 1900.

THE TREATMENT OF FRACTURES.*

THIS work is not presumed to be a treatise on the subject of fractures, nor is it exhaustive concerning the treatment of them. The author has had a large experience in this line of surgery and embodies within these pages the results of his observations. As such it is a valuable contribution on surgery.

*By W. L. Estes, A. M., M. D., Director, and Physician and Surgeon-in-Chief of Saint Luke's Hospital, South Bethlehem, Pennsylvania. Published by the International Journal of Surgery Company, New York.

THE TECHNIQUE OF SURGICAL GYNECOLOGY.*

THERE is more in technique than can be taught or learned. To an extent it is a part of the surgeon. However, there is much to be acquired by the observing student and patient worker. To such this valuable work can be of the greatest service. The author has left out nothing from the first steps in the preparation for operations to the convalescence of patients. In many respects he differs from most surgeons and on that account his ideas are well worth considering.

* Augustin H. Goelet, M. D., Professor of Gynecology in the New York School of Clinical Medicine; Consulting Professor in Gynecological Electrotherapeutics in the International School of Correspondence, Scranton, Pennsylvania; Fellow of the New York Academy of Medicine, and of the New York Obstetrical Society; Member of the American Medical Association and of the New York County Medical Association; Fellow of the Societé Français d'Electro-Therapie, et cetera. Three hundred and forty pages; 150 original drawings; bound in cloth, printed in white leaf. Price, $2.00. New York: International Journal of Surgery Company, 1901.

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ORIGINAL CONTRIBUTIONS.

ADDRESSES.

SOME SOCIOLOGIC PROBLEMS OF MEDICINE.*

By CHARLES T. McCLINTOCK, M. D., PH. D., DETROIT, MICHIGAN.
LECTURER ON BACTERIOLOGY IN THE DETROIT COLLEGE OF MEDICINE.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE inventory is a necessity in business. The wise man of business reviews his affairs at least once a year. This is not merely to see if he has made or lost money; that he can usually tell by his bank account. It goes deeper and inquires particularly as to what portion of his business is profitable and what not. The most careful attention is given to those portions of the business which show a loss. The thing that is succeeding may be left alone, but the failure must be corrected, if possible.

It seemed to me that it would be appropriate, and that you would not take it unkindly if, at this our last meeting for the season, I pointed out what appear to me to be some of the failures in our work. This I do, not because I have any particular fault to find with the profession. It were far easier and more to my liking to speak of its glorious attainments, of its noble sacrifices, of its heroic devotion to duty in the face of danger and death.

First, a few observations on the work of our society. I believe we can claim to have made a good beginning. One of the most striking, it may be the most important, social and economic movements in our day is that of the union, the banding together for mutual benefit of those men who have a similar trade or calling. Allowing for all the selfishness of the union, reckoning its faults and failings fairly, I believe that a balance of good remains. The world gets better work done, incompetents are kept out, and there is a more equable distribution of the profits of industry.

Almost every writer on the sociologic problems of medicine insists that a united profession is a necessity if we are to have our due, if we are to command that importance, dignity and remuneration which they believe is ours by right. Some among us believe that physicians should combine into a regular trade-union. Without arguing the matter my personal belief is that this is neither necessary nor desirable. I do not see the need for physicians to combine against the rest of the world, but I do see the pressing necessity for such combination against the incompetents and the undeserving in our own rank.

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*President's address before the DETROIT MEDICAL SOCIETY, May, 1901.

In a paper written some two years ago, entitled: "Advertising in the Medial Profession," I said: "Undoubtedly the great successes in medicine come to the great men in medicine, to those peculiarly endowed by nature or fitted by training for their work. But taking average men and average success I doubt if the best of them succeed best. Each of us can recall, not one but numerous instances of capable men who go through life with a very limited practice, while across the street, it may be, some ignorant pretender has and keeps a large practice. Probably in no business, certainly in no profession, are the people so incapable of choosing the good from the poor as in the choice of a physician. Witness the success of the Christian scientist, the eclectic, osteopath, homeopath and the whole brood of medical pretenders. Our code of ethics and our practice presumes that the people are fit judges of the physician's ability. I hold that this is not true. Were it true the quack and the advertiser would disappear. In law, if an attorney is weak, if he makes mistakes, if his opinion is not well-grounded, his associates at the bar delight in the opportunity to expose his mistake or weakness. The weakling is driven to the wall. In the ministry the sermon is criticised; the man is compared with others of his profession; the people can judge. But in medicine how is it? To the people the doctor must always approve of his colleague.

"As a profession we here encourage and there allow such practices that to the people there is nowhere to be seen a line of demarcation between the reputable and the disreputable physician; between the William MacClures and the veriest quack. We blame the people when they choose wrongly and yet we offer them no assistance in making their choice. We petition the legislature to step in and kill the weeds which we have permitted to grow. As it appears to me, we owe it not only to ourselves but to the people, to the great world of need, to help them some way, somehow, in selecting their medical advisers."

The main purpose in the organization of the Detroit Medical Society was the hope and belief that it might serve to bring into closer sympathy and union the reputable physicians of this community. As it appears to me, this should still be the chief object, and I trust that the officers installed tonight will count it both a pleasure and a duty to do their utmost to bring every available physician in the city and county into our midst. Let him belong to as many other societies as he may see fit. There should be other societies for special lines of work. I believe it is not too much to hope that in a few years membership in this society may be for the people of this community a certificate of medical respectability. If we could once have a large majority of the reputable physicians associated together it might then be wise to adopt some sign or symbol, owned by the society and loaned to its members, that would indicate to the patient who entered a physician's office that he had the approval of the best elements in our profession.

This community and the medical profession have suffered long and much at the hands of pretentious, self-assertive, newspaper-seeking physicians. Our society has set its mark of disapproval on this, but here we need to be cautious and to be just. This is a day of newspapers and of publicity. It appears to be one of the consequences, or, if you choose, penalties, of a republican form of government, and the people demand to know what the individual has and does. Neither the physician nor his work can escape this demand. If you have done something noteworthy in medicine the people insist on knowing it. If your opinion on matters of public health, or the welfare of the community, is of value they insist on having it, and with right. The doctor ought to be heard in the newspapers.

Listen to the code: "As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession." Again: "Medical men should be always ready, when called on by legally constituted authorities, to enlighten coroner's inquests and courts of justice on subjects strictly medical."

As it appears to me, many physicians are woefully ignorant as to the location of the boundary line between right and wrong in this field. We have had the rather amusing spectacle of a physician on the floor of this society quoting the evidence given in court by another physician who had been summoned by the state to assist it in prosecuting parties who were said to have sold poisoned food for the children of this community, quoting this testimony as an example of wrongdoing.

As I understand the matter there is no question of right and wrong if a physician chooses to inform the newspapers every time he goes out of town, writes an article, delivers an address, or does something a little out of the ordinary. It is a question of manners, not morals; he is lacking in modesty and self-respect. It is essentially the same thing as when Mrs. Smith requests the paper to announce every time she invites Mrs. Jones to tea. Simply vulgar, an attempt to gain prominence not voluntarily accredited to him. But when the physician through the public prints makes claims to exceptional skill, cites cases and operations wherein he succeeded after others failed, plainly bids for patronage, he becomes a charlatan and should be so characterized by our societies.

The newspaper is the principal means of communication between the quack and his victims and is unquestionably the most powerful enemy of the profession. They persistently defeat any attempt of congress or state legislature to regulate the sale of dangerous or worthless medicines. Their columns are usually open, for pay, to the quack, the procuress and the abortionist. But it will usually be found that newspaper editors and their assistants are aware of the harm of such and are at heart opposed to the policy of their business managers on this subject. This means that space is usually accorded the physician who has anything to say to the public. The proposal of a member of the American Academy of Medicine is worth considering. He says: "Would it not be preferable for the profession to come forward boldly and address the public through the public press regarding all sorts of ailments, thereby preventing their accepting the beguilements of charlatans?" I can picture immeasurable good that might come to this community from a series of carefully prepared newspaper articles on medicine, its limitations, uses and abuses, coming from one of our older physicians who is an authority in the community. As said before, I believe it is our duty some way, somehow to assist the people in choosing their medical advisers. So, the medical society should be, either directly or through its appointed representatives, an advisory body for the community on medical matters.

In the profession at large, there is a feeling of unrest and dissatisfaction among the majority of physicians. Life has become more complicated, living more costly, while their income has not proportionately increased. No longer is there the dog-like confidence of the people in the physician. They dare question his advice and presume to ask what his pills and potions are expected to do.

According to the treasury statement, proprietary, stampable medicines paid during the last fiscal year four million dollars in revenue taxes, or, as the tax was two and one-half per cent. of the selling price, there were sold for the year one hundred and sixty million dollars of such medicines. A very small part of this amount was paid by patented medicinals, principally German synthetics. But I should say that at least one hundred and fifty-five million of this was medicine that was sold directly to the people. For the same time, one of the best informed pharmaceutic journals of the country estimated that the entire sales of strictly pharmaceutic preparations was ten million dollars. The one hundred and sixty million does not include the salts, pills, herbs and forty and one nontaxable medicines sold directly to the people. But making all allowances, I feel sure that I am well within bounds when I say not one-tenth—probably not one-twentieth—of the medicine used in this country is prescribed by its physicians. What an awful, woeful lack of confidence in us!

Several explanations may be offered for this state of affairs. It may be said that the people are usually mistaken as to the need for medicine; that the majority of the ailments for which they seek relief in drugs are self-cured. Then where did they get this idea that every ill of the body should be followed by drug taking? From us? As a body it is our custom to give them drugs for any and every complaint. We are to blame. Again, it may be said that the people would prefer to go to the physician, but that they cannot afford to pay his fees every time they have a slight ailment. Then it follows that our services are not worth to the world the price we ask for them in all these cases. Still again, it may be said, the people are mistaken. If they would go to the doctor every time they feel ill, take his prescription, pay his fees, they would be better off in every way. I hope it is not treason to doubt this. But suppose the statement to be true. What a commentary on our teaching and practice! Ours is an ancient art—the doctor antedates history. Yet after all these centuries of observation of our work the people are not yet convinced that in the average case we can do better for them than they for themselves.

Is not the correct explanation this? By our teaching and practice we have led the people to believe that in drugs we have remedies for almost all bodily ills; that our *medicine* is all we have to give? The patient comes to us, we attempt to look wise, ask a few questions and give him medicine. Does it appear to him that he has gotten anything but medicine? And is not the conclusion a very natural one, that this bottle of medicine, which he can get at the corner store for fifty cents, all duly labeled, with explicit directions, and accompanied by hundreds of testimonials of people who have been cured by it — that this is as good or better medicine than DOCTOR JONES's? It must be good medicine, else so many people would not use it.

We are responsible for the medicine habit; on our heads belongs the blame that the people ask for drugs instead of a physician. One hundred and sixty million for secret nostrums; ten million or less for physicians' drugs! Ay, but the people are so ignorant in medical matters —we are and have been for centuries their teachers—and it is far from being the ignorant only who show a lack of confidence in our profession. The best educated people of the community are often found paying tribute to Christian science, osteopathy, *Similia*, and the like. Rulers and statesmen give testimonials to Peruna. The fact that intelligent people run after every medical fakir, Indian, herb, Chinese or Voodoo doctor is less of a reflection on them than on us. Why is it that the people have not confidence in us? My friends, looking the facts squarely in the face, there can be but one answer. We do not deserve it. By our attitude, if not our words, we practically promise, in every case we undertake, betterment, or at least amelioration, and we fail to deliver the goods. Too often it is a case of obtaining money under false pretenses. Blame the other fellow. Yes, his faults and failings are many but tonight we are considering our own. Would *you* trust the average doctor to treat you? Take his medicines without a question? Follow the life he prescribes? Submit to the operation he advocates? Would you? Then, why blame your neighbor, the merchant or harness-maker, if he shows a lack of confidence?

If I am right, the greatest mistake the profession is making is in its too implicit reliance on drugs and in leaving or leading the world to believe that drugs are all we have to give. One firm in this city is said to make more than five thousand different combinations of drugs. I believe it safe to say that more than ten thousand different mixtures and combinations of drugs are being used by the physicians of this country. Has not this passed into uttermost nonsense? Again, how many new preparations of drugs are called to your attention each year? Note the ever-changing panorama in the advertising pages of our medical journals. It appears to me that an impartial jury, with these facts, might well return the verdict that "we know not what we do."

Relying so much as we do on drugs an outsider would certainly suppose that we were thoroughly conversant with all the ingredients and properties of those we use. Is it so? How many here have ever used antikamnia, potonuclein, listerine, cystogen, or any of the one hundred and one concealed-formula preparations that are sold to the physician? Several years ago I attempted to poke fun at the representative of an eastern concern by asking how it was that he could sell such a worthless preparation. His rather contemptuous reply was: "Claim enough for it and you can sell anything to doctors." The sad part of it was that he told the truth.

Much is written nowadays on the overcrowding in the profession. We read of physicians in some countries receiving but fifteen cents for a call. But note again the enormous field which should be ours which we fail to occupy. More than one hundred and seventy million of medicines used; less than ten million supplied through physicians. Has it occurred to you to ask why, of the millions on millions given in recent years for the endowment of schools and colleges, only a pittance here and there has been given for medical education or research! It must be, either that our work is unworthy, or that we need to be censured for not acquainting the world with its worth and needs. In either event the blame belongs with us.

Reviewing the conditions I have described, it seems to me that we must conclude that in many respects our profession is in a bad way. We fail to command the respect and confidence that ought to be ours. Notwithstanding all our claims of ability and skill, the world prefers to do by far the larger part of its own doctoring. It is humiliating to confess that after all these centuries of medical work a well-educated man of affairs having to choose between the best trained physician of his community and an illiterate, unkempt quack, the latter is often his choice. I am sanguine enough to believe that these troubles are not beyond relief. But we must recognize clearly that they are of our own making, or at least permitting, and are to be remedied, if at all, by ourselves and not by legislators.

We need to recognize clearly that we are relatively ignorant of disease, and woefully ignorant as to remedies. We need more students and fewer practitioners of medicine. Perhaps the greatest of our needs is to lessen the incompetents in our ranks and to frown down those who make a trade of the profession and bring the whole into disrepute. We must teach the world that there are doctors and doctors. They cannot choose wisely; we must aid them in their choice. The practice of medicine must stand on its merits in the full light of day. The day of authorities *was*. The time when the doctor could look wise, pour out some powders or pills, mutter a few polysyllabic words, and then be credited with all but supernatural wisdom, is passing. The man of affairs counts the cost and reckons the gain when he comes to us, pays a dollar for a prescription, and when he goes to the corner store and buys Stuart's Dyspepsia Tablets or Bromo-Laxative Quinine for a quarter. We must be able and willing to stand the comparison. The doctor must we worth all and more than he costs the community. May the Detroit Medical Society have a fair share in solving these and other problems of our profession.

MEMOIRS.

A SYMPOSIUM ON CERTAIN ABNORMALITIES OF GESTATION AND LABOR.

MALPOSITION.*

By AUSTIN W. ALVORD, M. D, Battle Creek, Michigan.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

Among the most pronounced causes of abnormal gestation and labor is malposition of the fetus. In the practice of physicians who have a large obstetric experience, only two or three cases of ectopic pregnancy may be met during a lifetime. A badly deformed pelvis is rarely observed, and only seldom a difficult nephritic complication of pregnancy, but some one of the varied malpositions of the fetus will be sure to often become an unwelcome factor in the problem the physician will be called upon to solve at the bedside.

The fetus can truthfully be said to be in malposition when the larger extremity of the ovid fails to present at the superior straits, for by only such condition can the vertex lead the way into the parturient canal; but even with this position of the ovid at the superior straits, the vertex may not present at the outlet. It may be the occiput, or one of the lateral portions of the head that presents. Should the lesser end of the ovid present at the upper strait, it will be a breech presentation, or a footling, or mayhap the knees will impinge on the border of the superior straits, and so prevent descent and rotation. If neither end of the ovid presents, but, rather, one of its sides, one of the gravest complications occurs, and valuable time must not be lost. Any of these abnormal positions prevents the proper mechanism of labor, and so jeopardizes the life of mother and child.

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* Read before the Michigan State Medical Society at its Battle Creek meeting.

In discussing this subject it might be well to consider what conditions lead to fixation of the fetus before parturition. For a time after impregnation of the ovum by the spermatozoa of the male, it is tossed about, by any chance movement, in the cavity of the uterus, gaining nutrition by that wonderful life process, endosmosis, from the previously prepared lining membrane of the womb, and gradually developing as a whole, but chiefly at the head end of the fetus during the first few weeks of its new life. According to the natural law of attraction by gravitation, the head of the fetus is brought downward. Finally the placenta is developed and becomes attached to the uterine walls while the head of the fetus is directed downward. Such, at least, is the usual method of development to this time. As the amniotic fluid increases the fetus can and often does swing and float about in many positions, twisting the cord and performing evolutions which appear to be at the risk of its existence, to say nothing of various mutilations caused by bending and knotting of the cord. Fortunately, the impetus that drives this frail structure is derived from without and not from within, until fully half the period of fetal life is passed, by which time presumably half its growth within the womb is accomplished, or else its twistings and turnings would be greatly exaggerated, and the risk to its safety largely increased during the time when the greatest freedom of movement was possible. While a change of position is often possible during the later months of pregnancy, the tendency is to a return to its former position, head downward. This tendency is increased not only by the greater weight and size of the head end of the fetus, which would become more readily dependent when floating about, but by the larger end of the ovid sac becoming fitted to the needs of the larger position of the fetus, because of early occupation of this part. Thus, as parturition approaches we usually find the head presenting, and in a large majority of cases, the vertex, but the frequent deviations from the normal course of affairs constitute the varied malpositions with which we are concerned.

It is most important that a complete diagnosis of any malposition be made early in the case, as by only this means can proper effort be directed toward its alleviation before it is too late to save precious lives. If a complete and true understanding of the case is deferred until the bag of waters has been evacuated and the uterus has contracted with force on its contents, version of any kind will often be impossible without most serious injury to the mother, while the child is sacrificed. Therefore, an early and correct diagnosis of the conditions is indispensable to the intelligent and successful management of any malposition. By external manipulation, it is not a difficult matter to differentiate between a cephalic and a breech presentation. To the skilled accoucheur, it is not impossible by the same means to detect a face presentation, when the head is observed extended instead of flexed, while still at the brim of the pelvis. It is always certainly possible to know when the fetus is in a transverse position and which side is to the front. This knowledge indicates a shoulder presentation and also which shoulder it is. Thus, by external means alone, all the most important facts of position may be learned. If by the vaginal touch previously formed opinions are verified, then the diagnosis may be considered complete. Happily for the benefit of the physician, these irregular presentations, during the course of labor, tend to become regular; but when nature fails to remedy the abnormality, then is the time for the accoucheur to show himself master of the situation. Not by bluster or bravado, but by quiet, intelligent work. In head presentations, other than the vertex, it is of the greatest importance to convert the position of the head into a normal vertex presentation. In some cases this is easily done by external manipulation, if conditions are favorable and the effort is made prior to the rupture of the membranes. When the head presents at the pelvic brim, the normal position is one of flexion, but if there be an obliquity in the longitudinal axis of the uterus it may offer in a semiflexed or an extended position, when there will be a face presentation, or the more favorable occipital presentation, according to the varying conditions of the fetus. Should this state of affairs be recognized before the head engages in the parturient canal, it can be readily corrected by passing a bandage snugly around the pelvis with an underlying pad over the side toward which the uterus inclines, or the woman may be made to lie on the side opposed to the obliquity, when the force of gravity will act as the correcting agent. When the head engages with the face presenting, nature may still correct the defect by rotating the chin toward the pubes; but in this case, labor is sure to be much prolonged, at a great risk of life to both mother and child from exhaustion, because dilatation and expulsion are much impeded by mechanical action entirely obvious. These facts should make clear the great necessity for correcting a face into a vertex presentation, or choice of version must be made for the alternative as early as possible. If the membranes are still unruptured and the fetus small, success may be attained through cephalic version, by grasping the occiput with the hand introduced into the uterus and flexing the head, while the patient is under anesthesia. It must be kept in this position until the contractions are strong enough to hold it in the state of flexion. Without doubt the safer procedure, unless the pelvis be roomy, or the fetus small, is to convert a face presentation into a footling by version, providing that the case is seen before rupture of the membranes, or even soon afterward, and the face is not yet seriously engaged in the canal. When the face has entered the cavity, and the chin points to one or the other of the lateral planes, great care should be exercised to prevent posterior rotation of the chin, and to aid in its rotation anteriorly. This may be done by applying the hand to the posterior cheek, and keeping it there during the contractions of the uterus. Should anterior rotation fail to be secured, and the chin be carried around posteriorly, craniotomy will be the safest resource remaining, and the only one, if the patient is to have half a chance for life.

It is well to remember that the forceps are out of place either in a face presentation or its modified form, a brow presentation. To attempt to force a delivery through an impassable channel. is a terrible mistake, which is usually fatal to both mother and child.

In presentations of the pelvic extremity there are certain well-known cardinal points that should be kept in mind.

(1) Keep the ovid intact, and membranes unbroken as long as possible, that they may act as a wedge to open the cervix. At the best such a condition produces a slow, difficult labor fraught with many unusual dangers, and if dilatation can be aided by the amnion and its contents, the patient's interests will be materially advanced.

(2) When the membranes are ruptured, and the descent of the fetus begun, it is necessary to closely follow down the uterus, that the arms may not become extended above the head, and so labor become severely complicated. By keeping the uterus firmly held against the descending child, the head will be kept properly flexed, and, without this, great trouble together with risk of life will ensue.

(3) The head must be delivered as soon as possible after the shoulders, as the life of the child is now at stake; the cord is being pressed upon by the after-coming head and asphyxiation will shortly occur unless it is released. A reasonable traction upon the shoulders while firm suprapubic pressure is kept up will usually produce the desired result. Should such efforts fail, which I have never known to happen, the forceps must be at once applied and the head delivered. The successful management of pelvic presentations will often demand all of the physician's reserve forces to meet the emergency, and expose the measure of his latent knowledge.

As much as is possible the use of the blunt hook or any other instrument should be avoided, giving preference, rather, to a gum catheter loaded with a stout cord, and passed around the groin thus making a downward traction. Under no circumstance should ergot be used. It has no place in good obstetric practice.

The time is too short to discuss the multitude of suggestions and directions laid down by the authors. The truth is, that when a physician faces these unfortunate accidents in obstetrics, and by a knowledge of the anatomy of the parts and conditions present, by a ready wit and skillful hand succceds in unraveling the snarl, he is ever ready to dictate how it should be done, but the brightest student would fail by these methods and needs to think for himself.

I will indeed be sorry for a physician when meeting his first case of transverse presentation. Of course if called early the transverse presentation will be speedily converted into a vertex presentation, but before a person has time to have scarcely turned around, the fetus will be back in its old position as though it enjoyed lying crosswise. Then it must be changed again to a vertex presentation and this time to make sure, pads will be applied to each side of the little one, drawing a bandage tightly about the pelvis of the mother to keep it there. Suddenly the fetus glides back again to the original position. If the physician is a novice in the art, he will be overcome by a feeling of dismay, but if he is experienced, or blessed with resourceful reserve power, he will patiently wait until the cervix is fully dilated or dilatable, then calmly proceed to make podalic version, and deliver the child that would have brought consternation to the heart had the physician not been competent to meet the emergency.

The limitations of time prevent the discussion of the subject of surgical obstetrics as a part of this paper.

RENAL INSUFFICIENCY.*

By RUSH McNAIR, M. D., Kalamazoo, Michigan.

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Of all causes of abnormal labor, renal insufficiency is undoubtedly the most common. By general acceptance the term renal insufficiency includes a large number of phenomena ranging from slight indisposition to eclampsia. With such general significance the term is used here. Strictly speaking, renal insufficiency is responsible for only a part of the disorders to which the term is almost universally applied.

Eclampsia, the most dreaded final result of renal insufficiency, may be defined as a symptomatic phenomenon due to toxemias, the result of insufficient elimination. Much concerning the actual causes and nature of eclampsia is unknown. The theories of its origin are many. Practically it is sufficient to know that an accurate prognosis can, in nearly every case, be made if the physician makes a frequent systematic examination of the urine. Examination should be made not only for albumin but also for casts and urea. Of not less importance is the careful measurement of the daily excretion of urine. Exact inquiry should be made as to the presence of headache, disability of vision and indigestion.

The prognosis in eclampsia is always grave. The significance of a convulsion is measured not necessarily by its severity, but by the resulting impression on the circulatory, respiratory and mental conditions. My own experience leads me to accept the maternal mortality rates of the older writers; namely, about thirty per cent. The fetal mortality remains at approximately fifty per cent.

Treatment is: (1) Hygienic and prophylactic; (2) Medical; (3) Surgical. Prophylaxis consists in the regular thorough qualitative and quantitative urinalysis already referred to, and in taking care that not only the kidneys but also all other excretory organs are kept in a physiologic condition. It is important that the pregnant woman sufficiently exercise. Walking in the open air best meets this indication. Water should be freely drank between meals. The diet should be prescribed. Hot baths will keep active the emunctories of the skin. Saline laxatives are indicated if the bowels are sluggish. If these measures are inadequate or have not been employed and the symptoms are clear, it is time to invoke the aid of medicines. Of all drugs the mild chloride of mercury is the most efficient in stimulating all excretory functions. If it is exhibited in small repeated doses and followed by a dose of saline its best effect is secured.

By the exposition of our prophylactic and medicinal resources eclampsia can with comparatively few exceptions be prevented, and a certain proportion of the exceptional few will have been saved from actual seizure until labor is in progress, when the prognosis will be much more favorable.

When eclampsia has begun, whether prophylactic or other treatment has been exploited, the necessity for elimination is very urgent. This should be sought by a vigorous use of the measures already mentioned, namely, baths and active catharsis. But in fulminating cases and those in which the seizures and their effects are very severe, only the most rapid elimination will avail. Radical elimination is the most speedily accomplished by venesection. This procedure may be followed or better accompanied by the intravenous infusion of the hot normal salt solution. Chloroform should be administered until the seizure is exhausted. A full dose of morphine hypodermically given often renders the greatest service. It promotes skin elimination and lessens excitablity of nerve centers. Veratrum viride, exhibited to the point of pulse reduction to 60 or below, is a most valuable remedy. By it the excretory functions of the skin, kidneys and all other emunctories become more active; it is also a depressant to cerebral and spinal centers, and relieves local congestions by bleeding the patient into her own veins.

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*Read before the Michigan State Medical Society at its Battle Creek meeting.

All of these measures are, however, only expectant and wait upon the main indication which is to evacuate the uterus. Digital dilatation of the cervix uteri may often be accomplished with sufficient rapidity, but when the os is undilating or rigid and "the occasion fleeting," it is best to make a crucial incision of the os, nearly to the cervico-vaginal border, and apply the forceps. Blood-washing may well be performed at the same time. It must be remembered that from seventy-five to eighty-five per cent. of all cases of eclampsia are primiparæ and that their delivery is often prolonged. Edema of mother and child often exists to a degree that precludes any possible favorable prognosis for the latter. Since in such cases the fetal mortality is approximately one hundred per cent., under classical procedures, have we not the right to take into consideration the operation of Caesarean section as, under modern technic, furnishing the best prognosis for the child and taking from the mother no part of her own?

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NEOPLASMS COMPLICATING PREGNANCY AND LABOR.*

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NEW growths of various kinds are not an infrequent complication of pregnancy or labor. Inflammatory deposits about the uterus, tubes, ovaries or adjacent tissues, while perhaps not to be considered as neoplasms in the same sense as that of ovarian or fibroid tumors, yet are abnormal deposits of new tissue often surrounding a collection of virulent fluid and seriously complicating pregnancy or labor more frequently than any other form of neoplasm. It is true they may, like other forms of neoplasm, be such as to cause little or no trouble, and so long as there is no collection of infectious material in them, they are unlikely to do more than interfere with the proper development of the organ and produce abortion. There is no doubt that such inflammatory conditions produce a large per cent. of abortions, and on the other hand there is no doubt that abortions are the indirect cause of a large per cent. of the inflammations which, in turn, are the cause of the deposits. Impaction of the pregnant uterus in the pelvis is most frequently caused by firm adhesions to a retroverted organ, which prevent its rising up and out of the pelvis when it would otherwise do so. The treatment of these simple inflammatory deposits or adherences when no foci of infectious material are present, is largely antiphlogistic and expectant. Douches, tampons, massage and postural treatment should be used, thereby stretching, softening and absorbing the deposits, until the uterus rises out of the pelvis, after which it is likely to go on to maturity. Occasionally cases may fail to yield to this treatment when laparotomy is indicated for the purpose of separating the adhesions, bringing the uterus up into proper position, or doing whatever is necessary after the abdomen is opened. Where evidence of a collection of infectious material exists, such as a pus-tube, pelvic abscess or appendiceal abscess, the existence of pregnancy makes it imperative that such condition be removed. In this case pregnancy, instead of being a contraindication to operation, is a most positive indication for interference.

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Each case of pregnancy with new growth complications presents its own peculiarities and should be a study by itself, the treatment being decided according to the indications in the individual case. Experience has proven that pregnancies complicated by collections of infectious material about the uterus, in the tubes, or in or about the appendix vermiformus, have a very large mortality if treated expectantly; while if the infectious foci be removed before the pregnancy is too far advanced, the pregnant condition adds little, if any, to the mortality of the operation, and at the same time their removal adds greatly to the safety of both mother and child. It is true that patients with pus-tubes or pelvic abscess seldom become pregnant but it occasionally happens. Patients suffering from appendicitis, however, are as likely to become pregnant as though the trouble with or about the appendix did not exist and experience has proven the prognosis for both mother and child to be very grave if both conditions continue. Abortion in such cases of course means death to the child, has a high maternal mortality, in no way alleviates the appendiceal trouble, and therefore, as a method of treatment, has nothing to recommend it. Adhesions without foci of infectious material or a single mild attack require careful watching but will seldom demand interference. Whereas, every case in which infectious foci are at all evident, should, at the earliest possible moment, have such foci removed. Success depends upon an early diagnosis and early operation. If the pregnancy be advanced beyond the fourth month it is rarely advisable to interfere unless the indications be imperative.

Serious errors are frequently made by consenting to treat cases expectantly that should be operated upon; because a patient or her friends dread an operation or oppose it, on account of the fact that they are not made to understand the great necessity of it and the dangerous condition that exists. I have seen a considerable number of women die during the last months of pregnancy and also after the delivery, from rupture or bruising of a pus-sack in the pelvis or about the appendix, who, in my opinion, might still be living had they been operated upon at the proper time. As a complication of labor we well know the danger attending any foci of infectious material in the abdomen or pelvis, The rupture or bruising of the sack is only too likely to lead to peritonitis, general infection, and death. A correct diagnosis of such conditions in the latter part of pregnancy, during or immediately after labor, is very difficult until such complications exist as make an operation a very serious and generally questionable or an utterly useless procedure.

OVARIAN TUMORS.

We will consider them first as a complication of pregnancy.

The presence of an ovarian tumor during pregnancy is a constant menace to the life of both mother and child. If the growth be large it may by its pressure cause abortion, obstruction of the intestine, disease of the kidneys, dyspnea or edema to such a degree that interference is demanded, while peritonitis, adhesions and intestinal obstruction, suppuration of the cyst contents, rupture, gangrene, torsion of the pedicle, hemorrhage into the cyst and shock may occur at any time as the result of large or small growths. Solid ovarian growths or dermoids are rare but are considered even more dangerous than cysts. It is estimated that about fifty per cent. of mothers and eighty per cent. of fetuses lose their lives when both pregnancy and the tumor are allowed to remain. Any tumor large enough to be felt may become a serious complication, and it is well to remember they frequently grow very rapidly during pregnancy.

The diagnosis during the early months is made by the ordinary signs and symptoms of pregnancy being present and the ovarian growth is made out by palpation and percussion. If the patient or her physician have knowledge of the presence of the tumor before pregnancy began, it may be of great advantage. In the later months it may be extremely difficult or altogether impossible to differentiate between tumor and uterus.

TREATMENT.

All ovarian tumors, cystic or solid, larger than a small orange, known to complicate pregnancy between the second and fifth months, should be removed by laparotomy. I say after the second month because the diagnosis of pregnancy is seldom certain before that time, and before the fifth month because experience has proven it safer and less likely to bring on abortion. If the patient has reached the fifth month, unless the condition renders it imperative that something be done to relieve her, it is better to temporize until the seventh month, after which time the induction of premature labor may be considered. **Swan** states that in cases operated between the second and fourth months the maternal mortality is five and the fetal twenty-two per cent.—a clear saving of forty-two per cent. of mothers and sixty of children by early operation. Is anything more needed to show the folly of expectant treatment in such cases?

Ovarian tumors complicating labor may be divided into two classes: (1) Those above the child; and (2) those below the child.

The principal dangers of those above are rupture, hemorrhage into the sack, strangulation and gangrene. Strangulation or gangrene call for prompt action if the patient is to be saved, while rupture, providing the contents of the cyst be not septic, may not demand such prompt operation but will most surely call for it sooner or later.

Ovarian cysts below the child, whether large enough to interfere with delivery or so small as to offer scarcely any obstruction, are exceedingly dangerous. The child may pass by it without great trouble but the tumor becomes bruised and later gangrenous, when only prompt operation gives the patient a reasonable chance for her life. Tumors, if not too large or too firmly adherent, may be crowded up and the child delivered past them; but here again the danger of bruising and gangrene is great. The tumor may be aspirated, freely opened or removed through the vaginal vault, adapting the operation to the case. Aspirating a simple cyst containing thin fluid will prove quite satisfactory, while if the growth be multiloculer or solid and the fluid be thick or purulent, the operation would be dangerous if not useless. The general opinion is that when it becomes necessary to remove the growth the abdominal route is safer for both mother and child, being also easier for the operator. The growth may be removed in this way and the child delivered through the natural passage, or it may be delivered through the abdomen, as seems best. Dermoid cysts are especially dangerous because of their tendency to suppurate during pregnancy, or after delivery, or become adherent to adjacent structures and rupture.

A tumor that has been above the pelvic brim during delivery of the child may, after the child is delivered, descend into the pelvis and obstruct the delivery of the placenta.

FIBROIDS.

Interstitial, submucous, intraligamentous or subserous fibroids may interfere with pregnancy. Submucous and interstitial growths are likely to cause sterility or abortion. Subserous growths are unlikely to seriously interfere with the development of pregnancy unless they are adherent in unfavorable positions or very large.

Intraligamentous growths unless large generally rise out of the pelvis as the uterus develops, and permit the passage of the child, so that they are unlikely to interrupt the course of pregnancy. Fibroids and pregnancy complicated by pus-tubes or other septic foci, should be treated from the standpoint of the latter.

When a growth is known to exist that will surely interfere with delivery at full term, the question of premature labor or abortion should be considered; but, it must at the same time be remembered that the mortality from such interference has been as great as, and some claim greater than, Caesarean section at full term.

If the growth be in the cervix, its removal may be possible either before or at the time of labor. In the hospital last week such a one was removed from a patient three months pregnant. The tumor was about the size of a hen's egg, but there was no interference with the pregnancy nor serious inconvenience to the patient.

In forty-four cases of fibroid tumors complicating pregnancy which have come under my care, there was only one in which it has been necessary to interfere by operation during early pregnancy. I believe expectant treatment, in the absence of positive indications for immediate operation, is the safest and best treatment for these cases.

Fibroids complicate labor by interfering with delivery or causing hemorrhage. They may interfere with delivery by forming an obstruction to the passage of the child or interfering with uterine contractions so that the pains are faulty and ineffectual; or, if situated in the lower segment of the uterus, although of insufficient size to obstruct the passage of the child, may interfere with dilatation of the cervix. These complications may be overcome by artificial dilatation, incision of the cervix, and forceps. When the tumor is so situated that it will not permit of delivery there is seldom any choice or escape from an abdominal operation, and unless the growth can be dislodged and removed Caesarean section and hysterectomy must be performed. Embryotomy with a living child is today scarcely considered a justifiable procedure, while the abdominal operation is considered the safer of the two, offering a good chance to save both lives and at the same time relieve the woman of the tumor.

CANCER.

Cancer of the uterus complicating pregnancy is quite infrequent. This disease occurs most frequently when the activity of the uterus is about exhausted and conception or pregnancy unlikely to occur. If discovered early in its existence and early in pregnancy, hysterectomy is the only proper method of treatment, the prognosis being as favorable as though pregnancy did not exist, but if not discovered until the disease is far advanced or the pregnancy beyond the fourth month, expectant treatment should be employed. Hysterectomy under such conditions has proved to be very fatal, usually resulting in the death of both mother and child. It is true that the prognosis is very grave whatever be the course pursued; but I have seen a very badly infiltrated cervix soften and make delivery possible when a few months before it seemed quite impossible. Should delivery through the natural passage prove to be impossible Caesarean section is the proper procedure at this time, if the child be living, the operation being entirely in the interests of the child. If the child be dead, embryotomy or Caesarean section, whichever is deemed the safer, should be performed.

I will now report the following cases as bearing upon the subject under discussion:

A woman, twenty-five years old, who had been married five months, and whose periods were regular, was taken, October 13, with a severe pain in lower part of the abdomen, together with tenderness in right iliac region and other signs of appendicitis. While in bed the patient missed her first period, and had several relapses of the pain and tenderness during the next seven months. She was very nervous and would not consider any operative measures. At about the end of the eighth month she was taken with severe vomiting and all signs of serious trouble in the abdomen. I delivered the child but the mother died twenty-four hours later with every sign of peritonitis. A postmortem was not allowed, but I believe this patient had a focus of septic material about the appendix which ruptured when the serious symptoms began. I also believe an early operation might have saved her.

Another case was that in which the woman had several attacks of peritonitis when she became pregnant, and after she was two and a half months advanced had a severe attack simulating peritonitis. It was thought wise not to operate until the acute symptoms had subsided, and upon the patient becoming convalescent the abdomen was opened, the appendix, which contained considerable septic matter, removed, adhesions about the uterus were separated and the abdomen closed. The patient made a very good recovery, pregnancy was uninterrupted and she had a normal delivery.

In another case, a woman twenty-four years old, who had suffered from severe dysmenorrhea for several years, had been in bed on four different occasions with attacks of peritonitis. The periods stopped two months before I saw her, and she was then suffering from severe backache, pain in pelvis, nausea and vomiting, and had some edema of the lower extremities. An examination revealed an enlarged uterns, a mass on the right side the size of an orange, which was very sensitive and fixed. The patient readily consented to an operation which revealed a pus-tube surrounded by extensive inflammatory deposits. The tube and ovary were dissected out and removed and the abdomen closed. The patient made a good recovery and pregnancy proceeded normally.

A woman, thirty-two years of age, having regular but very painful periods, complained of severe backaches and pain in pelvis with slight nausea. An examination revealed the uterus slightly enlarged and enlargement on either side which was very sensitive. A diagnosis of pus-tubes was made and their removal advised. An operation revealed extensive inflammatory deposits on each side, the largest being on the left side. The uterus was soft and about four and a half inches in length. The appendages were dissected and removed and abdomen closed. This patient was operated on out of town so that I did not see her subsequently, but her physician reported that labor pains came on three days after the operation and something was expelled from the vagina which was supposed to be the products of a conception. The enlarged and softened uterus suggested the possibility of an early pregnancy at the time of operation, but the tubes and ovaries were in such a condition that it scarcely seemed possible. Apart from this complication her recovery was rapid and complete.

Another woman, twenty-five years old and married six months, sent for me on account of severe pain in the abdomen. She had the appearance of a very large woman at full term. I suggested, not then knowing her history, that it was approaching labor, adding that she looked as though it was about time for her confinement. The woman then gave me her history of being married six months, missing four periods with rapid enlargement, and although she was rather large before being married had never suspected there was any growth present.

The patient was suffering from severe pressure symptoms as well as the pain in the side, on account of which I was sent for. Examination revealed in this case a large fluctuating growth in the upper part of the abdomen and corresponding to the history an enlarged uterus in the lower part. I advised immediate removal of the tumor and ten days later removed an ovarian tumor weighing twenty-three pounds. The excision of the tumor necessitated the removal of the ovary and tube on that side. The patient made a perfect recovery, had a nice girl baby at the proper time, and eighteen months later was delivered of a second child. The abdomen remains firm and the patient is well in every respect.

PREGNANCY COMPLICATED BY MULTIPLE DERMOIDS.

A very unusual case was that of a woman aged twenty-seven years and married four years, who had one child three years old. There had been no abortions. Nine years ago, after an attack of la grippe there had been a dull, painful sensation in the right side. The patient knew she had a growth in the abdomen some months ago, and it was as large as a child's head. The woman said she became pregnant three months ago, and was very weak, being able to walk very little, and having nausea with vomiting and a great deal of pain in the abdomen. An examination showed the breasts to be enlarged, the areola darkened and glands active, while the abdomen was enlarged to the size of full term. Palpation revealed the fact that at least two separate enlargements were contained in the abdomen, each being about the size of an adult head, one filling the upper part of the abdomen, freely movable; the other, filling the lower zone and not so freely, but still quite movable. Vaginal examination proved the pelvis also to be filled by a dense mass firmly fixed therein, which could not be moved up or down and which filled the pelvis so closely that a finger could not be passed between the growth and the pelvic wall. The cervix was high up under the pubic arch and pointing forward. The mass felt not unlike a pregnant uterus and seemed a part of the lower growth in the abdomen. The diagnosis was multiple growths, probably ovarian, which complicated pregnancy, while the uterus was apparently retroverted and incarcerated in the pelvis. There was nothing to advise but laparotomy. Five or six days after the first examination I opened the abdomen and found the pregnant uterus in the lower part of the cavity with a large, hard growth above it, another below it, filling the pelvis, and a smaller one on either side; all hard growths and all ovarian. I removed all the growths intact, although there appeared to be fluid in portions of them. The one in the pelvis gave me much trouble, as it was packed in so tightly and adherent in so many places that even with combined pressure from below and traction from above it seemed as though it could not be removed without diminishing its size. Both ovaries and tubes together with the tumor were tied off close to the uterine horns and removed. The patient had some infection and suppuration in the wound, but made a good recovery and went home six weeks after the operation, feeling well. The uterus had developed so that the fundus was above the umbilicus, while the fetal movements were vigorous and the heart distinctly heard.

This woman could not speak English and seemed to lack any kind of judgment or knowledge in caring for herself. Two days after the operation, during the temporary absence of the nurse, she arose from her bed and walked across the room, and it was only by keeping a nurse constantly at her bedside that she could be kept in bed.

About six weeks after the patient went home she did a laborious day's work, lifting some heavy articles which brought on an abortion. She recovered and is well, but the abortion was absolutely unnecessary.

The tumors that were removed proved to be four dermoids, three attached to the right ovary and one to the left. Those attached to the right side were in the form of a three-leaved clover with a small middle leaf. One large growth was in the pelvis below the uterus, the other large one in the upper part of the abdomen above the uterus, and the small middle one lying between them by the side of the uterus. Multiple dermoid tumors are rare and I know of no other case wherein so many have been found to complicate a pregnancy.

EARLY PREGNANCY COMPLICATED BY LARGE FIBROID.

A woman, thirty-two years old, who had been married five months, said that she had noticed a gradual enlargement of the abdomen for four years, which has been growing very rapidly for the last two months. The time of her last period was eight weeks ago, and the patient had nausea with vomiting. A severe attack of peritonitis occurred six weeks ago and another two weeks ago, from which she had not fully recovered, being still unable to sit up. Her physician gave me the following additional history: A hard, movable tumor the size of a fist was discovered four years ago, and at that time the patient was advised to have it removed. Six months ago the patient consulted him relative to the advisability of entering matrimony. He examined her then and found a hard growth filling the abdomen to the size of a full-term pregnancy. The advice was emphatically against marriage, and he also told her that the most favorable time for an operation had passed, but urged her to have it done, as the only possible help. The patient entirely ignored his advice, refused to have anything done with the growth and was married. Six weeks before consulting me she had a very severe attack of peritonitis and had not entirely recovered before another attack occurred. She had been very ill, her life being despaired of a good part of the past two weeks.

The woman was brought to the hospital on a stretcher, complaining of a severe pain and tenderness in the abdomen, and having a temperature of 101° and a rapid pulse. Examination showed a large abdomen filled to the ensiform by a hard, nodular and very sensitive mass. A vaginal examination revealed the purplish color of the mucous membrane, a softened cervix, with a uterus enlarged and softened. A diagnosis of pregnancy, two months advanced, complicated by fibroid tumors, peritonitis and some septic foci was made. I consented to operate, as it seemed her only possible chance of life. She certainly had nothing to lose and everything to gain. On August 22 I opened the abdomen and found a large, solid fibroid, filling the abdomen from pelvis to ensiform, adherent to abdominal walls, omentum, intestines and liver. The adhesions were, for the greater part, not firm and I succeeded in separating them without injuring any important structure, but with difficulty delivered the tumor through an incision extending from the ensiform to the pubes. The tumor was attached to the fundus of the uterus by a round, hard, half-twisted pedicle, four inches through, which connected it directly with some other growths in the uterine wall. This pedicle was divided, but, as it was found impossible to control the hemorrhage by ligatures, and leave the two months pregnant uterus behind, I was compelled to do a hysterectomy. The extirpated uterus contained several small-sized fibroids besides the two months' fetus. An examination of the large tumor showed several necrotic areas, some of which were quite large, having small spaces containing virulent fluid. The patient stood the operation very poorly, but reacted quite promptly when put to bed, doing very well for three days, at the end of which time death occurred quite suddenly and unexpectedly; which appeared to be caused from sudden heart failure.

It has been well said that women having fibroids and entering matrimony are entering upon an interesting and venturesome experiment.

These are a few of the many cases of neoplasms complicating pregnancy that have come under my care and observation, which are fair illustrations of the worst cases I have met with. Out of the forty-four cases of fibroid tumors which I have recorded, I find eleven have had abortions, two Caesarean section, six have been confined more than once, and nearly all having tumors of any size have had severe hemorrhage whether delivery occurred prematurely or at term.

RECTAL OBSTRUCTION.*

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THE whole subject of intestinal obstruction is one of great importance, but this discussion is restricted to a consideration of rectal obstruction, a condition to which this portion of the bowel is for several reasons peculiarly liable.

First, the rectum is situated in a bony cavity where it has a comparatively fixed position; second, it is in intimate relation with organs disposed to displacements, enlargements, and disease, that tend to monopolize pelvic space, thereby causing occlusion of the bowel; and third, either on account of the extraordinary pressure to which it is exposed, or on account of its innate susceptibility to disease, the terminal portion of the intestinal tract is very frequently the location of lesions which produce obstruction.

*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

It is not my intention to attempt to give an exhaustive account either of the pathogenic conditions resulting in obstruction of the rectum, or of the treatment of these conditions, but rather to present for consideration some features of the subject that have impressed me as important.

A knowledge of the anatomy of the rectum is absolutely essential to any success in rectal surgery. The vascular supply has an important role both in the causation of rectal disease and in operations for their relief. The superior hemorrhoidal artery divides into two branches which pass down the posterior part of the rectum external to the muscular coat. After they perforate the muscular coat they divide into many branches which run parallel to the lumen of the bowel - one in each longitudinal column. These branches form the most important part of the rectal blood supply. They anastomose with the branches of the middle and inferior hemorrhoidal arteries which are arranged in a like longitudinal manner. The veins have a similar distribution. The longitudinal arrangement of the blood-vessels accounts for the profuse hemorrhage following transverse incisions of the rectum. The rectum has both a sympathetic and a cerebrospinal nerve supply, the former from the mesenteric and hypogastric plexuses, the latter from the sacral plexus. Of the nerve supply I shall make the following practical observations:

(1) The lower two inches of the rectum are richly supplied with nerves, and are extremely sensitive. Above this area the rectum becomes gradually less sensitive.

(2) Many of the nerves of sensation pass into the submucous region between the external and internal sphincters. These nerves pass upward and downward supplying the mucous membrane of all this region. Their entrance corresponds with the white line at the junction of the mucous membrane and skin.

(3) Branches from the same portion of the sacral plexus supply the rectum, the skin over the sacral region of the spine, thighs, the heels and urethra. This accounts for the symptoms of rectal trouble located in these regions.

(4) I shall not give a description of the coats of the rectum, nor of the muscles, more than to mention the sphincter action of the levator ani, which accounts for the partial control over the act of defecation after the loss of the true sphincters. The distribution of the peritoneal coat is a question of considerable dispute. The upper portion of the rectum is completely surrounded by peritoneum. Posteriorly the peritoneum does not approach within five or six inches of the anus. It is reflected forward on the bladder or uterus. Anteriorly, however, it comes much lower. In a patient I examined, the peritoneum could be felt per rectum at a distance of about two and one-half inches.

The fact that the word rectum is such an obvious misnomer, has been of some value in impressing us with its various curves. Some of these are of little moment, but there is no doubt of the practical value of keeping in mind the sharp curve just above the internal sphincter, so that in passing the finger into the rectum it must be directed well forward for a couple of inches and then turned sharply backward.

I will say a few words in reference to methods of examination for rectal obstruction. In the lower two or three inches the detection of obstruction is a simple matter. With the patient in the Sims' lithotomy or genupectoral positions, the finger passed into the rectum can readily determine the presence of obstruction, its location, and generally its nature. The only misleading feature that arises in this connection is the presence of the transverse rectal folds. These may interfere with the progress of the finger, so that the lumen of the bowel cannot be found and a mistaken diagnosis of stricture can be made. I have found that in many cases if the finger is directed well backward and from side to side so as to impinge upon the sacrum the lumen will often be discovered. The transverse folds are usually confined to the sides or front, never extending completely around the intestine. Sometime a change of position will cause the disappearance of the folds. I have several times noticed that the folds cease to give trouble when the patient is changed to the genu-pectoral position.

Stricture and other sources of obstruction beyond the reach of the finger are much more difficult to diagnosticate. Howard Kelly's rectoscope has some value, for in many cases it can be passed up the entire length of the rectum and the lumen of the intestine be kept in full view so that pressure may be directed in the right direction. Olive-shaped bougies are highly recommended. But often the diagnosis of obstruction beyond the reach of the finger must rest upon other than direct exploration. In doubtful cases an exploratory laparotomy is necessary.

The symptoms of rectal obstruction vary greatly. I shall mention only the more important and such as should lead to careful examination.

(1) Constipation that is gradually becoming less amenable to ordinary palliative measures, and which alternates with diarrhea.

(2) Discharges—diarrheal, purulent or bloody.

(3) Pain in the rectum, lower region of the back, legs or feet, or stomach.

(4) Disturbance of digestion with coated tongue.

(5) Vomiting.

There is no one symptom or group of symptoms pathognomonic, and it is surprising to what extent obstruction may progress without any symptom. Along with these symptoms may be mentioned some of the more remote evidences and effects of rectal obstruction. There is a deterioration of health resulting from disturbed digestion, from autointoxication and malnutrition. In addition to these debilitating factors there is undoubtedly a profoundly depressing effect upon the nervous system. This nervous disturbance does not seem to be reasonably accounted for by the interference with alimentation or elimination.

Rectal obstructions permit a variety of classifications. They may be divided into (1) Partial, and (2) Complete. They may be classified as to location into (1) Conditions in the rectum causing obstruction, and (2) Conditions external to the rectum causing obstruction by pressure. Obstruction ranging from a slight interference to complete occlusion is produced by pressure exerted from without upon the rectum. The usual causes are: (1) Displaced organs, (2) Tumors, (3) Inflammatory contractions. A retroflexed uterus sometimes appears to be the cause of a certain degree of obstruction in the rectum. We find obstinate constipation accompanying a large number of retroflexions of the uterus, and after the relief of the retroflexion, the constipation often yields to comparatively simple treatment.

A few weeks ago I was consulted by a woman for the relief of a very obstinate constipation, which came on four or five years ago, soon after the birth of her youngest child. From that time she has had retroflexion and prolapsus uteri for which she was operated upon, by the modified Alexander operation, with complete success. The uterus is retained in perfect position, but the constipation is gradually becoming worse. Evidently the constipation did not depend upon the retroflexion.

There are cases in which there is pronounced retroflexion uteri and no interference with the function of the bowel. Nevertheless the number of cases in which the relief of this displacement is followed by relief of constipation impels to the belief that the cure consisted in the removal of an obstruction. One thing is certain, that in rectal examinations retroflexed uteri give the impression of an obstruction.

A prolapsed sensitive ovary generally produces a partial rectal obstruction which can only be relieved by removal of the ovarian trouble. Recently I had under my care a woman with very troublesome constipation and defecation was painful. Upon examination by rectum and by vagina the enlarged tender ovary could be readily palpated. She had been under treatment for three years without relief. An exploratory operation revealed a prolapsed, adherent and inflamed ovary which I removed. There has been complete relief of the constipation as well as the most gratifying improvement in general health.

Kelsey cites a case wherein rectal obstruction was the result of stone in one of the seminal vesicles, which he removed and secured complete relief of the obstruction.

In these cases the irritability is a factor in causing the obstruction. It does this by producing rectal spasm or voluntary efforts to postpone a movement.

Of factors causing rectal obstruction none are more common than fibrous adhesion and bands, the result of pelvic inflammation. However, we often find the pelvic organs matted together by extensive adhesions with apparently no interference to the bowel. In other cases the fibrous bands produce almost complete occlusion.

In 1897 a woman consulted me for the relief of a very obstinate constipation, otherwise she professed to be in perfect health. However, examination revealed a condition in the region of the left broad ligament that appeared like the result of previous inflammation. In July she was taken with acute salpingitis and on the 22d I operated for her relief at Harper Hospital. I found on the left side a complete entanglement of ovary, tube, bowel, bladder and uterus. The separation of these was attended with unusual difficulty and resulted in the discovery of a very interesting condition. In the first place, in the middle of the mass of adhesions and completely hidden, was the left horn of a uterus bicornis unicellis which made a most unexpected and embarrassing element in an operation of this kind. An adhesion bound together the rectum and bladder uniting the two between the uterine horns. A misleading circumstance was the fact that the right horn of the uterus remained completely free and gave the impression that it was the complete fundus. This case was reported shortly afterward. I do not recall seeing the report of any similar case. The patient made an excellent recovery and the constipation was much relieved.

I shall cite a case of complete obstruction caused by pelvic inflammation external to the rectum.

A woman aged thirty-three years applied to me for relief of constipation. She claimed to be perfectly well except for the persistent constipation. Apart from the usual diseases of childhood and an attack of inflammatory rheumatism when she was twelve years of age, she had always been well. The woman had two children which were both living and healthy. The family history was negative. She had been using cathartics for several years, but they were becoming less and less effectual. The last prescription given by her family physician had not been effectual and she was in search of a new cathartic. A rectal examination revealed an obstruction about two and one-half inches from the anus. It felt like a stricture. By using some force the tip of the finger could be made to engage in the opening which would admit the passage of a large lead pencil. An operation revealed very firm adhesions in the pelvis and much thickening of the parietal peritoneum. The band causing the obstruction was the lower fold peritoneum where it is reflected from the anterior surface of the rectum. In this case there was absolutely nothing to arouse suspicion of any rectal trouble, save the constipation, which on account of its long duration might easily be assumed to be quite independent of obstructions.

Rectal obstruction arising from diseases in the rectum itself is produced by (1) Stricture, (2) Impaction of feces, (3) Tumors, (4) Spasm. Stricture of the rectum follows (1) Ulceration—diarrheal, dysenteric, tubercular, or syphilitic. (2) Traumatism—accidental or operative.

When stricture is produced by ulceration the symptoms of the latter predominate in the early stage. In a large percentage of ulceration syphilis is the cause. It has been stated by an author that as high as fifty per cent. of strictures were due to syphilis. Tubercular and dysenteric ulcerations are not common.

I have a patient under my care at present with the following history:

In December, 1900, he was taken with what appeared to be an attack of acute gastroenteritis. After a few weeks during which he was confined to the bed, the symptoms resolved themselves into pain and distress after eating, tenderness in the region of the stomach with morning diarrhea. He consulted me last March for the relief of his stomach affection. Examination of the stomach contents revealed no evidence of gastric disorder. Rectal examination disclosed an ulcer with the area of a square inch within one and one-half inch of the anus. The border was clearly defined but not raised. The base of the ulcer felt hard and rough. There was a beginning stricture at the upper border of the ulcer. Below the ulcer there were several large internal piles. Apart from habitual constipation and an occasional attack of piles, the previous personal and family history were negative. In this case the sequence was as follows: (1) Constipation and hemorrhoids, as a predisposing cause; (2) Acute indigestion; (3) Diarrhea; (4) Ulcer; (5) Stricture.

A Whitehead operation performed six weeks ago has been followed by relief of all the symptoms.

Some strictures are the result of operation. According to GANT the majority of these can be traced to the work of itinerants and charlatans, but occasionally we see an operation for hemorrhoids where the whole circumference has been denuded, followed by a stricture, and this, even when the coaptation of the parts was fairly well maintained.

Feces accumulated in the rectum may form obstruction by mechanically opposing the passage of material and by destroying reflex sensibility. When the impaction is in the ampulla the diagnosis is easily made, but when beyond digital reach it is more difficult. The question of rectal spasm is one concerning which there have been and are very many opposing opinions. I think the disputation depends largely upon ambiguity in words, and not so much upon difference of opinion as to facts.

There can be no question that irritability of the mucous membrane in the region of the sphincters, which produces painful defecation, results in contraction of the sphincters forming an obstruction. This happens in fissure or irritable ulcer, or in any other condition producing hypersensitiveness in the lower portion of the rectum.

In February, 1901, I had a patient with a most obstinate constipation. Defecation was accompanied with evidence of the most excruciating pain. Without local or general narcosis it was impossible to obtain a movement of the bowels. Digital examination revealed nothing but a very sensitive rectum and a powerful gripping of the sphincters. On account of certain nervous and mental symptoms that began to develop I called DOCTOR DAVID INGLIS in for consultation, and a more thorough examination under an anesthetic was postponed. The patient's mental condition grew rapidly worse. For six weeks she was the prey of hallucinations and delusions. During this time the rectal spasms gradually subsided. Mentally she made a rapid recovery, but there is some irritability in the rectum and she is suffering from hemorrhoids.

Within a week I examined a man whose case resembles the one just cited.

In January, 1901, he was taken with an attack of la grippe. Before this he had some trouble with hemorrhoids. After the attack of la grippe, the rectal trouble became more and more severe; to the hemorrhoids was added very obstinate constipation. In April symptoms of mental derangement began to manifest themselves. Rectal examination revealed a spasmodic contraction of the sphincters, with an accumulation of feces in the rectum.

I believe the majority of rectal surgeons consider spasmodic stricture of the rectum above the sphincter, a creation in the mind of a dishonest and unscrupulous fake doctor.

The relief of rectal obstruction caused by diseased and displaced pelvic organs generally demands active surgical interference. Several cases of ventral suspension in which a very persistent constipation led me to believe that the retroflexion was the direct cause, were followed by relief of the constipation. When irritability is a prominent element in the organ causing pressure, the most gratifying results follow the restoration of normal conditions, or removal of the offending organ. While a sensitive ovary presses upon the rectum, relief of constipation is impossible. The same may be said of inflamed seminal vesicles or prostate gland.

Recently I examined a man who complained of constipation. I found that he had hematuria and very frequent urination. Examination of the rectum revealed a painful area in the region of the bladder. A search disclosed the presence of some calcareous material in the posterior region of the bladder. The treatment of the constipation consisted in the removal of the bladder trouble.

The treatment of obstruction from causes in the rectum is often very difficult. Impaction of feces is amenable to measures directed toward softening of the mass and removal with a scoop. I have found caroid, a drachm to the half pint of water, an excellent remedy for the disintegration of the fecal material. Large enemata of oil and soap and water are generally effectual.

Apart from hemorrhoids, benign growths in the rectum are not common. They are generally polypoid. The only treatment is removal.

Last year I had for a patient a girl who had been very much troubled with constipation. She passed some blood at stool. I left instruction for her to observe the extent of the hemorrhage, and she reported a protrusion of something from the rectum. I decided that this was in all probability a polypus, and had arrangements made for an examination the next day under an anesthetic, but that evening the mother brought the polypus to me in a bottle. The pedicle had broken spontaneously. I was unable to obtain an examination, but she professes to be entirely relieved.

Of the treatment of cancer of the rectum, I shall make only the following observations: When it is limited to the intestine and the entire growth is within reach of the finger, extirpation is indicated. In very extensive growths and those high up in the bowel, I believe radical operations are contraindicated.

Stricture of the rectum, from nonmalignant ulceration, may be treated by gradual dilatation or complete dilatation under an anesthetic, or by enucleation of the fibrous tissue.

As in several other departments of surgery, the demand for prophylactic treatment is becoming more and more imperative. Ulcerations should be detected early and subjected to treatment. Hemorrhoids should always receive attention. Constipation from whatever cause, is responsible for many rectal diseases. Too often, the rectal trouble has reached an advanced stage before it is diagnosticated, and then some radical operation is necessary. Sometimes the responsibility rests upon the physician, who either through lack of knowledge of the significance of the symptoms, or through reticence or negligence, fails to make physical examinations. What may be remedied today by a thorough dilatation of the sphincters, incision of the face of an ulcer, excision of a hemorrhoid, or removal of some external interference with a complete cure, in time will require a Whitehead operation, an extirpation, or colostomy.

THE MODERN MANAGEMENT OF DIPHTHERIA.*

BY ALEXANDER MACKENZIE CAMPBELL, M. D., GRAND RAPIDS, MICHIGAN.

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As one stands upon the threshold of the new century and reflects upon the general advance which has been made in medicine and surgery, and then compares the progress obtained in the treatment of different diseases, he cannot but be convinced that in the management of diphtheria most wonderful progress has been achieved. Under the present management of this malady, by which I mean the restriction of its spread, as well as its curative treatment, the mortality has been reduced from a high to a comparatively low percentage. Chemic and microscopic experiments have robbed the disease of many terrors, and the saving of many lives has been the reward. We cannot consider too attentively the methods by which such splendid results have been accomplished.

During an association of over three years as bacteriologist of the Grand Rapids Board of Health, a sufficient number of cases of diphtheria have come under my observation to enable me to arrive at some very positive conclusions concerning the management of this disease. To physicians living in larger cities, this article will contain little that is interesting or instructive, but to those whose labors are elsewhere it may prove of some benefit and encouragement.

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* Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

The name diphtheria was given to the disease only about seventy-five years ago, although among early writers it was mentioned by MACROBIUS and COELIUS AURELIANUS. It was prevalent in Holland in 1337, Spain in 1622, France, in 1743, and England in 1754. DOUGLAS, of Boston, described it in this country in 1736, and BAIRD, of New York, in 1771. Since 1825 it has been considered a distinctive disease, and ever since it has been thus recognized and treated by all medical authorities. At the times of their demise had the culture tube and microscope been used as diagnostic agents, in the manner in which they are today, it doubtless would have been demonstrated that WASHINGTON, the EMPRESS JOSEPHINE, and STEPHANIE, the beautiful queen of Portugal, were the victims of diphtheria.

Only within the last decade has any specific remedy been known for diphtheria and its etiology was unknown until 1883, when KLEBS first observed its causative germ in membranes from the throat, and when in the following year LOEFFLER isolated it in pure cultures, demonstrating its pathogenic power. Treatment previous to this time was governed largely by the various ideas held as to the nature of the disease, just as we often and blindly direct treatment to diseases whose causative agent is unknown. Until its specific cause is known, how can we apply rational curative measures to a disease? According to each man's knowledge were his therapeutic efforts in the management of this ailment, and it consisted of purgation, stimulation, local treatment applied to the throat, and a proper dietary. Its contagiousness was questioned even by physicians, and consequently prophylactic measures were not given the same importance they are today.

The management of diphtheria, according to our present knowledge of the disease and its etiology, is one of the crowning achievements in the march of medical progress. Today we have a knowledge not alone of its specific cause, but also of its specific treatment. In considering the present management, let us discuss successively the etiology, diagnosis, and treatment.

Etiology.—The specific microorganism which is recognized to be the cause of this disease, is the Klebs-Loeffler bacillus, a germ that gains entrance into the mouth and lodges in the mucous membrane of the throat, which location it seems to select. There it grows, multiplies and elaborates a poison or toxin which produces the many symptoms characteristic of this ailment. It is very easily transmissible, and until physicians recognize this fact more intensely and understand its manner of transmission more thoroughly, diphtheria cannot be fully stamped out. Contact with persons suffering from the disease, inhalations of the victim's breath, handling of books, toys, or clothing of those infected, may cause it many months after such articles have become infected. Indiscriminate kissing, drinking from the common watercup at school, or from the common winecup at communion are alike dangerous procedures. In fact, the ways in which a person may become infected are legion, and wherever two or three are gathered together, there may the ubiquitous germ be in the midst of them.

Diagnosis.—Diphtheria presents every variation both locally and systemically. It is sometimes so mild as to escape detection; sometimes so severe that its victims become thoroughly saturated with the poison and are beyond aid before they come under the physician's care. The disease is frequently difficult to differentiate from membranous sore throat and ulcerative tonsillitis; and while those of large experience may be able to distinguish it clinically, yet there are many cases wherein a positive diagnosis can only be made by culture and microscopic examination. I believe that physicians are beginning to avail themselves of this valuable aid in doubtful cases, but that its use is far from being fully appreciated. Many die of diphtheria who are never treated for it, and many die of it because the diagnosis has been made too late. Cases have come under my own notice, in which the physician, uncertain as to the exact nature of his patient's ailment, delayed in resorting to the microscope until death supervened before an exact diagnosis was made and consequent treatment was administered. My experience, although limited, persuades me to strongly emphasize the necessity of an early microscopic examination in every sore throat looking suspiciously like diphtheria. It is my custom during the months when this disease is most prevalent to always have with me a culture tube so that I can take a culture at any time. If upon my first visit I become clinically suspicious of diphtheria treatment is conducted on antidiphtheritic principles until a positive diagnosis has been made, which can usually be done before the second visit. The technique of taking a culture is important. It should be taken before the throat has been gargled, or otherwise treated with antiseptics. I have learned to apply the swab rather freely to the membrane, so that a portion may be detached that has been adjacent to the mucous membrane. Usually an attempt is made to spread whatever is received on the swab very thoroughly over the surface of the culture medium. If the tube is placed in an incubator at body heat after inoculation, a microscopic examination can be made in a few hours, and if these are done at the soonest possible moment a comparatively early diagnosis can be made.

Treatment.—A positive diagnosis having been made, the proper management of the case and of those who have become or who may become infected constitutes the sum and substance of these remarks. It is of paramount importance to look after those who have been exposed, for unless prohibited they may scatter broadcast the germs of this disease. In the first place the victim should be isolated in a well-lighted and well-ventilated room, from which all unnecessary furniture and trappings have been removed. Clothes and bedding, together with everything else that has been endangered by infection, should be disinfected. The house should be immediately quarantined, and those who have been exposed given immunizing doses of antitoxin, while the patient should receive a curative dose.

BEHRING, KITASATO, ROUX, MARTIN and others have shown that if the serum of animals previously immunized against diphtheria be injected into other susceptible animals, the latter are immune to the disease. Upon this fact depends the serum treatment of diphtheria. Antitoxin is a serum and is a specific against diphtheria. It is so recognized today and is to be accredited with reducing the mortality in some instances to as low as four per cent. BEHRING's original contention has almost been realized that if administered during the first or second day it will reduce the mortality to five per cent. In GERMANY, FRANCE, JAPAN and in our own country, statistics show a more marked saving of life from the serum treatment as compared to all other methods. The initial dose is in my judgment of no little importance. All observers agree that the efficacy of antitoxin is commensurate with the earliness of its administration. Consequently, an early diagnosis and prompt injection of antitoxin are too obvious to need much further comment. The number of units injected as a curative measure is a matter of some conjecture. Doses varying from one hundred to ten thousand units have been advised. As an immunizing agent from fifty to three hundred units are usually given. It appears to me that no definite amount can be fixed upon, but I believe that in the past we have been intimidated into giving too small doses, owing to our lack of experience with this serum. In severe cases I would recommend a larger number than two thousand units, which is usually considered a maximum dose. VILLY recommends an intitial dose of twelve thousand units, while MUSSER reports complete success by giving to children five hundred units every six hours until improvement follows. I incline to more heroic doses of antitoxin than have been given in the past, and especially are they indicated in severe cases and when patients are seen late in the course of the disease.

Intubation of the larynx was proven to be a practical operation nearly half a century ago, but not until late years has it become a common procedure. I believe it is a rational measure and that its use may supplement that of antitoxin in many instances. It is an operation of short duration, attended with little danger, and followed with good results. I consider it preferable to tracheotomy, but prophesy that the needs for both of these procedures will diminish as we become more familiar with the use and value of serum therapy.

I do not depreciate the value of many remedies which were used before the manufacture of antitoxin, and which are still in use today. In addition to the serum as a specific, I believe in the administration of antiseptic preparations for the throat, of mild laxatives and of stimulants, whenever symptoms indicating these arise.

Great care must be taken during convalescence. Not long ago I, with another physician, examined a severe case of diphtheria. Large doses of antitoxin were given, which resulted in an uneventful convalescence, until the twelfth day, when the boy died very suddenly from paralysis of the heart. This calamity was induced by his leaving the bed and partaking of a large dinner, which was done without the knowledge or permission of his physician.

The prophylactic measures are of utmost importance in the management of this disease. The nasopharynx should be kept clean, and during an epidemic should be treated with some mild antiseptic solution. A bacteriologic examination for the Klebs-Loeffler bacillus should be made from every sore throat having any indications of diphtheria, and all patients suffering from this disease should be isolated until culture and examination show the complete absence of the germ from the throat. Inasmuch as the period of incubation is considered to be approximately from three to twelve days, those who have been exposed should be immunified. I recall an instance in which one member of a family was attacked with diphtheria. The attending physician advised immunizing all of those who had been exposed, and gained the consent of all excepting one, who in a few days was stricken with the disease, while all the other members escaped. I believe that antitoxin is almost as useful as a prophylactic as it is when employed as a curative measure.

In my mediocre attempt to place before this society some facts and opinions concerning this important subject, I have become more and more convinced that many are sacrificed to diphtheria because of delay in diagnosis and treatment. It is our duty as physicians to be ever on the alert, to thoroughly inform ourselves about any measure with an object to minimize the danger of a serious disease; and we are only living up to our highest usefulness when we avail ourselves of every preventive and curative agent that has been the outcome of scientific research.

FEVER—A SYMPTOM.*

By HEDLEY WILLIAMSON, M. D., Detroit, Michigan.

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In considering what theme would be of interest to the Fellows of the Academy it occurred to me that the subject of fever might provoke a profitable discussion. Are present theories regarding this subject correct? As a matter of fact, have not views concerning fever changed almost entirely during the past fifteen years? Are results in the treatment of this disease such as should satisfy the profession with the knowledge bearing upon it? I think not.

After consulting recent authorities it must be acknowledged that there is great diversity of opinion on the subject; and I draw the inference that this is a hopeful sign, which before long will result in lines of treatment tending to reduce mortality considerably below its present rate.

I regard the bacteriologist as the one from whom final results must be expected. Through clinical experience the profession has acquired many truths which have resulted in much good. Physicians have determined the contagious and infectious character of certain diseases, and have adopted means of isolation which greatly prevent their spread. Vaccination has been discovered to be a prophylactic against smallpox, and a great improvement has been made in the treatment of diphtheria with antitoxin. It is along these lines that the greatest good must come. Yet, given a patient with one of many acute diseases which is complicated by that striking symptom fever, that so many consider of such serious import, quickly leading to the dissolution of the vital forces, and what does it mean? What can be done with it? If called to a patient and confronted by a fever, shall its reduction be sought either by mechanical or medicinal means? The laity, owing to an erroneous view for which the profession is largely responsible, practically demand, when their friends are receiving treatment, that fever be reduced.

As physicians are aware, most of the heat of the body is lost by the vasomotor mechanism of the skin, which amounts to between seventy and eighty per cent.; by the lungs at a rate of twenty per cent; by the urine and feces at the rate of four per cent. These figures of course are indefinite, as the exact measurement of heat loss is very difficult to obtain; yet they are sufficiently accurate to show that by mechanical means, usually the bath, an easy and powerful method is offered for the abstraction of heat from the body. Another means, medicinal, is also powerful, not so infallible perhaps, yet at the same time quite efficient. The latter method has so many objections that it is being largely discarded by many of the more prominent medical men.

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* Read before the Detroit Academy of Medicine.

Is fever a physiologic or a pathologic process? Is it normal or abnormal? I am of the opinion that it, if I may term it so, is both a normal and pathologic function; and all things being equal patients would fare badly if during the course of a disease there were no increase of heat in the economy. I think, although many hold contrary opinions, that a reduction of temperature interferes with the course of the disease. This seems to be disproved by those cases of exanthemata wherein the disease runs its course without an elevation of temperature, but I think this can be explained by the large loss of heat from an active heat-reducing center.

When an attack of measles develops in a child, chills and chilly sensations are experienced, and on taking the temperature a rise is noted. If the increase of temperature is pathologic or abnormal it should be reduced, but I think all will agree in saying that the old-fashioned method of placing the patient in a warm room and covering him with a liberal supply of bedclothes to prevent as largely as possible the loss of heat, is excellent practice; and the child would fare badly if by either mechanical or medicinal means its temperature were kept at normal. On the appearance of the eruption the active disease has practically spent itself and the temperature has already fallen, to remain down unless a complication occurs, which of course is not the original disease.

In cases of smallpox I have kept the temperature very low and have noted a marked increase in the length of time of the eruption. Whether an increase of temperature is inimical to the development of bacilli, or whether the system is more able to counteract the development of these bacilli under a rise of temperature, must be left to bacteriologists for determination. I have no doubt that the latter view will ultimately be found to be the correct one. If I am correct a rise in temperature should not be reduced because temperature is not injurious, but really beneficial to the progress of the disease.

A common rule to follow in the bath treatment of typhoid fever is to administer a bath when the temperature rises above 102°. Those who believe in the theory that fever is injurious regard temperatures rising above 102° as too high for the safety of their patients. I have no doubt they believe that any increase of temperature above normal is injurious, but make 102° the line above which it should not rise without the interposition of a bath. I maintain that if a bath should be given at 102½°, 103°, 104 or 105° according to their theory that fever is injurious, the physician would not be dealing honestly with himself, his patient, or his theory if he does not treat his patient by baths at the slightest rise of temperature. Why is it that 102° is the danger point demanding a bath? It cannot be that temperatures below that mark and above normal are regarded as beneficial.

I do not wish to convey the impression that I am opposed to the use of the bath. It has its application, being a marked tonic to the heart, and the general system; and the grateful patient is soothed into a refreshing sleep by its invigorating qualities.

What surgeon, in the treatment of an abscess, would give antifebrin and antipyrin, or administer a cold bath? He would treat the disease directly by evacuating the pus, when the need for antipyretics would vanish. Has it ever occurred to you, that there is a marked similarity between a deep-seated abscess cavity which has difficulty in discharging its pus, and typhoid fever? I will admit that in typhoid fever there is a much more serious problem than an abscess cavity; but the quicker these small multiple ulcers in the intestine are treated as a large one situated elsewhere in the body, by free drainage; as near as possible aseptic conditions; if possible some remedy that is directly antagonistic to the development of the bacilli causing these abscesses; by not administering large masses of decomposing, indigestible, unsuitable food, the less often will physicians be called upon to use the bath and the quicker will they be able to discard it entirely.

I do not think this subject has yet been thoroughly investigated. I have no doubt that before long bacteriologic research will discover something antagonistic to the development of disease in the human economy.

PELVIC LESIONS: AN IMPORTANT FACTOR IN DELAYING AND PREVENTING THE NORMAL MENOPAUSE.*

By THEODORE E. SANDS, M. D., BATTLE CREEK, MICHIGAN.

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IN no other branch of medicine has there been such great progress as in that of gynecology. The brilliant achievements of aseptic surgery have rendered many of the hidden lesions of the pelvic cavity, which but a few years ago were considered beyond surgical interference, amenable to the operator's knife. So successful has been the work of the surgeon that there is great tendency in the gynecologist of today to become too radical regarding surgical procedures, and oftentimes an operation is performed when more conservative measures would better serve the patient's interest. On the other hand, the general practitioner is swaying to the opposite extreme by pursuing conservatism to a degree that might be termed detrimental to the pelvic ailments of women. This state of ultraradicalism and ultraconservatism in gynecology has brought about a condition in which the many minor ailments of women have been neglected or their importance overlooked. The class of ailments known as pelvic lesions, while not of sufficient importance to claim the attention of the radical surgeon, who is usually oblivious to every case that does not present sufficient gravity for his ideal—a hysterectomy or an abdominal section—are nevertheless far-reaching in their effects and have an important bearing on the health of women. The existence of these ailments is my apology for calling your attention to the seemingly commonplace subject, the normal menopause and pathologic conditions that disturb it.

The change of life in woman presents without question one of the most important and interesting subjects offered to the physician, and especially to the gynecologist. There is probably no subject in medicine that has been so sadly neglected, and today its pathology and derangements cause more suffering and make more invalids than all other pathologic conditions combined.

What do we mean by menopause? It is that phase in the life of a woman in which her sexual activity ceases. In determining the time at which this period begins and ends, we usually rely upon the most striking symptom or sign which is the sudden or more gradual cessation of menstruation. With reference to the age, the change occurs later in women of the North than in those of the South. In our zone the average is forty-two to forty-six years, and with but very few exceptions the normal change takes place within this limit. Among the exceptions we may find a very few striking ones. **Brien Du-Baismond** observed two cases in which menstruation ceased at the age of twenty-one, and as an instance of the other extreme **Blanchard** and **Langland** report cases of persistent menstruation in women one hundred and six years of age. The change of life being a natural physiologic transformation of the female organs it should normally take place with but little disturbance to the system, save a few of the peculiar phenomena that might be expected in passing from functional activity to that of complete rest. Kind nature never intended woman to suffer at this period of her life, and she does not unless there is some pathologic condition present to thwart nature in the effort to bring about a normal condition. There must not only be a cessation of the menstrual flux, but there must accompany it a general atrophy of all the genital organs and the retrogade metamorphosis that places each organ in the physical condition they were in at the age of puberty.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

Thus we see that simply ceasing to menstruate is not in itself evidence that the change of life is complete or the menopause is established. This period of life is a wise ordination of nature, and is intended to give woman the much needed rest she requires to help her cast aside the many ailments of womanhood and be free from the diseases incident to the childbearing period. Today we do not find that typical condition that nature intended, but in the majority of women almost the reverse is observed. Instead of being the "herald of peace," happiness, and good health, it is the forerunner of many serious conditions, a time of life much to be dreaded and a befitting time for many ills that seek their solace at this particular period.

So often is the change of life unnatural, producing so much disturbance and accompanied with so many morbid conditions, that it well deserves the popular opprobium, the "critical period." It has become the dreaded era of woman's life. Its pathology renders more invalids than all other causes combined. It may be asked why this condition of affairs exists? Why is the menopause disturbed or delayed in so many women? Why is one of nature's richest blessings of womanhood gradually transformed to a condition that is seldom ever normal? There are many reasons. The evils of modern civilization have exerted their influence to a certain extent, but in the great majority of women in whom the normal menopause is prevented there is some kind of pelvic lesion, usually one of seeming minor importance, which is responsible for the serious disturbances that occur. Experience teaches that a lacerated cervix, an endometritis, all forms of dislocation of the uterus, and most of all subinvolution, are the common conditions producing a disturbance of the menopause; and no doubt it is the extreme engorgement and hyperplastic condition of the tissues that prevent the transformation and atrophy which is so essential to the establishment of the menopause. All new-growth formations are potent factors in prolonging the change by increasing the vascular supply, producing prolonged and continuous hemorrhages, obstetric accidents, and in fact all forms of pelvic disturbances that are present at the time the change should take place, are active factors in delaying and preventing nature from performing the grand work that is so conducive to the welfare of the woman. The establishment of the normal menopause is a typification of nature's handiwork in bringing about a great physiologic process that is essential to the preservation of woman's health and future welfare. Should nature be thwarted in her undertaking serious results must surely follow.

The pathology of the menopause demands our most careful attention and closest consideration. Whenever the menopause is not established within certain limits of the age, forty-five, it should be considered the result of some active cause and treated on the same broad principle as is any pathologic element. It is the duty of the physician to make a thorough examination of his patient and find if possible the cause or causes that have prevented nature from performing her functions, and in this way remedy the many ailments incident to this period of life.

As I have already said the establishment of the menopause normally is one of the essential elements to the preservation of woman's health. It is one of those natural physiologic changes intended by nature for a grand purpose. As civilization advances the normal condition of woman's life gives away to the abnormal, the physiologic to the pathologic, and the majority of women suffer in some way.at this period. It is no wonder they fear its approach and long for the time when it shall be a condition of the past. Not that the change of life under favorable circumstance is different, or that nature is more derelict in her duty at the present time, but that the many causes tending to disturb it are on the increase, and the many seemingly little ailments that are such potent factors in doing violence to nature's efforts are not receiving the attention they should. In a measure women are responsible themselves. They take it for granted that a critical time is to be expected, a self-suggested period of suffering and ill health, a hemorrhage or discharge, and to them the condition is only "the change of life." As in the case of the infant with worm fits and convulsions during dentition; the ailment is something to be expected, so they think it unneccessary to consult a physician oftentimes until it is too late to offer them the much needed help. Again, the doctor is responsible in many instances for not thoroughly investigating the pelvic organs and assisting nature to accomplish her purpose. The family physician especially is responsible for it, as it is he who usually sees the patient first, when proper help might remedy the evils. Too often are the symptoms simulating the change of life mistaken by the physician for its own peculiar phenomena, which are really evidences of nature trying to cope with lesions of the pelvic organs that prevent the menopause. My experience in the treatment of diseases of woman justifies me in saying that I believe too little attention is given by many of the profession to the accidents and incidents of the climacteria minor ailments, which if attended to at the proper time might prevent many of the grave constitutional affections, or render unnecessary in many instances the surgeon's knife.

The establishment of the normal menopause is a cure, a remedy for many of the ailments of the childbearing period, while the delayed or disturbed menopause paves the way to a life of invalidism, the asylum, or the grave. This paper is, in a measure, a plea for the more careful consideration and investigation by the physician of the pathology of the climacteria seeming expedient when we consider that the majority of the serious conditions occurring at this period of life could be prevented if they were attended to in time and the normal menopause established, thus giving to women the peace of mind and rest of body that kind nature has intended. The menopause presents today a serious question for the gynecologist and the general practician. Its disturbance presents many and varied phases of a pathologic character, from the slight reflex irritation to the many grave and serious neuroses. Its establishment at the proper time is as essential to the maintenance of health as is the appearance of the menses at the age of puberty. In the great majority of cases its disturbance is the result of neglected pelvic lesions. With very few exceptions, nature, free to do her duty, establishes the menopause within very narrow limits of the age of forty-five. If the menses do not cease near this age we should regard it as pathologic hemorrhage.

How often are patients found suffering from conditions simulating what is at least popularly denominated the "change of life," extending anywhere from five to fifteen years, the patient idly but painfully waiting all this time to get through her "critical period." This is indeed a misnomer. It is not the menopause, but a period of invalidism, the result of some pelvic lesion for which nothing has been done by herself or her physician, except wait for struggling nature to do something impossible. Again I beg leave to say, it is the imperative duty of the physician, whenever he finds the slightest deviation from a typical normal menopause, to make a thorough examination of the pelvic organs and restore them as nearly as possible to a healthy condition, thus giving nature a chance to do her duty.

INSPECTION OF THE RECTUM AND SIGMOID FLEXURE BY MECHANICAL MEANS.*

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During the past ten years great advances have been made in all branches of medicine and surgery, but in none have they been greater or of more importance than in that of diseases of the rectum and sigmoid flexure.

Twenty-two years ago I graduated in medicine, and our professor of surgery gave us one lecture, one hour long, covering the whole subject of rectal diseases, as it was then taught in the University of Buffalo. He spoke of piles only, and recommended the old-time ointment of tannin and opium as the best treatment, saying that patients did not die from piles, and operations for their relief were dangerous and usually unnecessary.

Today in most of our medical colleges there are didactic and clinical lectures given on rectal diseases, by men who are devoting their time and energy to the study of this specialty. There is also a national society, the American Proctologic Society, composed of rectal surgeons from various parts of our country, which indicates how important this branch of surgery has become. When a patient now consults a physician regarding some disease of the rectum, instead of asking a few questions and prescribing a simple ointment, the doctor proceeds to make a careful physical examination of the lower bowel, after which more skillful treatment can be instituted. As in the visual examination of the stomach or urinary bladder, special instruments and technique are required, so likewise in the examination of the rectum, which is a collapsible tube, are special instruments and technique necessary.

Doctor J. Marion Sims announced to the medical world nearly sixty years ago, that the hollow pelvic viscera would inflate if the orifices were opened when the patient was in a knee-breast posture. DOCTOR SIMS was specially interested in plastic work of the vagina, uterus and bladder, and I am not aware of his using this posture for examination of the higher rectum and lower sigmoid. DOCTOR WILLIAM H. VAN BUREN, in 1871, published a description of the knee-breast posture for inflation and inspection of the rectum. Other surgeons since then have used similar postures and tubular specula or retractors for opening the lower portion of the rectum. There were not any rectal instruments made, to my knowledge, by which one could obtain a good view of the rectum for more than four inches until the long proctoscope and sigmoidoscope of DOCTOR HOWARD B. KELLY was invented.

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*Read before the Michigan State Medical Society at its Battle Creek meeting.

In *Mathews' Medical Quarterly* of April, 1895, DOCTOR OTTO RAMSEY, of Baltimore, in a paper entitled, "A Report of a New Method of Examining the Rectum and Sigmoid Flexure," says: "I have been closely associated for some time with DOCTOR KELLY in his work, and have been especially interested in his new method of examining and treating disease of the rectum and sigmoid flexure. He has worked at this subject for many years, examining his patients in the knee-breast position with special instruments which were devised for the purpose, and which in his hands give satisfactory results. With these instruments, which are hollow metal cylinders of varying lengths and diameters, and with the patient in the proper position, the whole rectum and a considerable portion of the sigmoid flexure can be brought into view and lesions be recognized, which with the instruments usually in vogue would be impossible to find, as for instance, locating a stricture high up in the rectum or in the sigmoid flexure, mapping out areas of ulceration, demonstrating the extent of a proctitis or sigmoiditis, differentiating a stricture of organic origin from one caused by pressure of new growths or the other pelvic organs, et cetera. DOCTOR KELLY at first used short, hollow, metal tubes, varying in length from three and one-fifth to four and four-fifths inches, and with an inside diameter of one and one-fifth to one and two-fifths inches. These have been gradually lengthened, going higher and higher up the bowel, until now tubes fourteen inches in length are easily introduced to within four centimeters of the end, and a view of the entire rectum and a considerable portion of the sigmoid flexure obtained through them.

In July, 1896, DOCTOR THOMAS CHARLES MARTIN, of Cleveland, wrote an exhaustive article on "Proctocolonoscopy and Its Possibilities by a a New Method," which was published in *Mathews' Medical Quarterly*. DOCTOR MARTIN's instruments are similar to those of DOCTOR KELLY, and he certainly is an expert in their use. About two years ago DOCTOR WILLIAM V. LAWS, of Philadelphia, and DOCTOR RAWSON J. PENNINGTON, of Chicago, each perfected excellent pneumatic sigmoidoscopes, which are great improvements upon the former instruments in use.

I have here a set of PENNINGTON's instruments, consisting of (1) a universal handle and flange; (2) a set of sixteen detachable tubes of various lengths and diameters, the latter ranging from eighteen to twenty-seven millimeters in length, and the former from five to twenty-two centimeters, which may be readily connected to the handle by means of a bayonet joint; (3) adjustable obturators corresponding to the tubes; (4) a glass window fitting into the flange by a ground joint, making the instrument air-tight; and (5) a connection for attaching a bulb to inflate or distend the bowel with air.

The technique is now to be considered. A suitable table or chair should be used in making an examination. I am using in my office a "Yale Special," with the lamp attachment, and find it a most convenient chair as well as a handsome piece of furniture. The advantage of this chair is that it has attached on the left arm a knee-board, upon which the patient's knees rest when in the knee-chest posture. The patient sits in the chair with the body turned toward the left, and with the right knee crossed over the left. The left arm should be folded at the side as in the Sims posture, or it may embrace the right border of the chair-back. There is a small pillow that the patient should hold with the right hand against and upon his left shoulder. After the chair is brought to the horizontal position the patient is in the Sims semiprone, semiflexed posture. Now the external anus and fixed rectum are to be examined, and an ocular and digital examination of the anal verge is performed when the patient is relaxed, and also when he is bearing down. Before introducing the anascope a digital examination of the fixed or anal rectum must be made. It is necessary to lubricate the anascope with vaseline, and, holding its end against the rectal sphincters, direct the patient to bear down. Bearing down expands the rectal sphincters, relaxes the levator ani, thins the pelvic floor or shortens the fixed rectum and presses the rectal sphincters over the instrument, or, we might say, patient's anus is made to climb down the instrument. The anascope being introduced and the obturator withdrawn, an inspection is made and observations are directed while withdrawing the anascope. In using the proctoscope and the "Yale Special" chair, a patient must be in the knee-breast posture. Having placed and fixed the shoulder-strap to the chair, with the patient's knees well drawn up, tilt the chair to the extreme oblique lateral position. The lubricated proctoscope is gently pressed upon the anus in the direction of the umbilicus until the sphincters are felt to yield. The instrument as it passes into the inflatable and movable rectum should be pointed to the sacral promontory, and subsequently into the sacral hollow. Upon withdrawal of the obturator the rectum is ballooned by atmospheric pressure. If the bowel is not sufficiently ballooned by atmospheric pressure, apply the cap containing the glass window and inflate the bowel as much as necessary for an inspection. With a little care the eight-inch proctoscope can be easily passed up the bowel.

By the use of these instruments one is able to inspect and treat the entire rectum, its various chambers, valves, and also a part of the sigmoid, with as much ease as in dealing with laryngoscopic or rhinoscopic conditions, and no longer are physicians justified in prescribing for patients with rectal diseases without having used the latest and best means for making an inspection of the bowel. Sometimes a stricture of the rectum, ascites, fixation of pelvic organs from inflammation, or an extrarectal growth, will prevent the inflation of the rectum.

OSTEOMYELITIS OF THE FEMUR.

BY ALEXANDER GORDON GRAYBIEL, M. D., CALEDONIA, MICHIGAN.

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ACUTE suppurative osteomyelitis is the term used in designating an infectious inflammation of the medullary portion of bone, resulting in suppuration.

The etiology of suppurative osteomyelitis is well known to be due to the development of pyogenic cocci; but the streptococcus and the staphylococcus have been discovered in the pus, and cultures injected into the veins of animals have produced abscesses in the ends of the long bones of animals so injected. How the microbes gain access to the body in the absence of a wound is a matter of conjecture. That they gain entrance through the mucous surface is advocated by some. After effecting an entrance they are carried by the circulation to these points of predilection, the junction of the epiphysis with the long bones, there to await a favorable opportunity for development. The lower end of the femur, the upper end of the humerus, and the lower jaw are the bones usually attacked, but the frontal bony ribs and pubes are not exempt from its ravages. Among the exciting causes are exposure to cold, debility and traumatism. It occurs as a sequela to infectious diseases, and in adults after some debilitating disease. That it is seldom found in adults is due to the fact that in fully developed ossified bone the soil for its lodgment and development is not favorable. Any condition which causes a change in the circulation, thereby lowering the vitality of the part, affords an opportunity for these cocci to develop.

Among the first symptoms is a chill, followed by a fever and rapid pulse. Before the disease has sufficiently developed to make a diagnosis the patient is seen to be suffering from a serious constitutional difficulty. Tenderness over a suppurating focus is marked, and is the most reliable diagnostic symptom in locating the seat and extent of the difficulty. Loss of function is an early symptom. No movement or manipulation is tolerated without manifestation of extreme suffering on the part of the patient. If the disease attacks one of the long bones near a joint, synovitis with swelling and effusion is readily recognized and is one of the primary objective symptoms. Swelling along the shaft of the bone is absent until a corresponding periostitis develops, the result of a migration of the pyogenic cocci through the haversian canals to the surface, when separation of the periosteum takes place and pus accumulates beneath that membrane. By this time discoloration of the skin and fluctuation manifest themselves, and then arise the symptoms peculiar to phlegmon. Phlebitis is one of the latest symptoms and may manifest itself anywhere, but in one of the cases, which I shall speak of later, it manifested itself in the arm corresponding to the side of the infected limb.

The disease is sometimes mistaken for rheumatism, but the differential diagnosis should not be difficult when we consider that rheumatism is seldom confined to a single joint; that it is migratory, attacking first one joint then another; that the tenderness in the latter disease is confined altogether to the joint affected, and is not distributed along the shaft of the bone contiguous to the joint. Again the temperature in osteomyelitis is usually higher. Some difficulty in differentiating might arise during the early stage of multiple osteomyelitis.

As to prognosis, it may be said that if an expectant plan of treatment is adopted a large number must succumb to sepsis and loss of limb. If, however, operative measures be instituted prior to the development of periostitis and septic absorption by making an opening into the bone, removing the septic focus and providing ample drainage, the prognosis both as to saving of life and usefulness of limb is favorable.

The pathology I shall omit, referring the reader to the numerous able works extant on that subject.

As to treatment, the cases rarely if ever come under observation sufficiently early for the physician to adopt prophylactic measures. The only recognized treatment is operative. An incision through the periosteum is not sufficient, unless nature has effected an opening between the epiphysis and the diaphysis or in some other portion of the shaft, but to wait for pus to make its exit to the surface involves great risk. Separation of a large portion of the periosteum with death of the corresponding bone, infection of the whole medullary tract, suppurative synovitis, and general sepsis may be the reward of such procrastination. Rather anticipate pus, open the bone, remove the infective focus and provide ample drainage as soon as a diagnosis is made. If in doubt open under aseptic precautions. If pus be not found it may make its way through such opening in a short time. If not, the wound is a simple one. Better to err and operate than to delay and court disaster.

The following cases have occurred in my practice:

CASE I.—A girl whose age was five years, of healthy parentage, was brought to me supposed to be suffering with toothache. I found her with high temperature, rapid pulse, face swollen from ear to ear, with extensive edema between the lower jaw. The mucous membranes and tsssues of the lower jaw were detached. A probe passed between the two could be swept around the jaw from one side to the other. Pus was constantly dribbling from the mouth. The teeth could be lifted out with the fingers, and for several days the child would break away portions of the alveolar process with the fingers. The parents preferring death to an operation, I prescribed antiseptic gargles, and in less than a week the poor patient succumbed to sepsis and inanition.

CASE II.—A child, aged thirteen years, of German parentage, whose father was of dissolute habits and inferior intelligence. The patient was previously healthy, and complained of pain in the right knee. Upon examination the leg was found to be in a semiflexed position, with considerable effusion in knee-joint. The child was unable to move the limb or to bear any weight upon it. I prescribed rest in bed, application of cold, and a brisk cathartic. All the symptoms had increased the following day, together with marked tenderness along the shaft of the femur, extending upward for two inches. The parents were made acquainted with the nature of the case and an immediate operation was advised, but they refused consent. The opposition of the parents to any operative measure was attributable to ignorance and to the advice of a quack, whose bedimmed intellect led him to make a diagnosis of rheumatism, for which was advised counterirritation to the joint to remove inflammation and "absolutely no cutting," as the father expressed it. The temperature and pulse were 104 and 103 respectively. The joint was excessively distended and the pain was almost unbearable. Consent was obtained to aspirate the knee-joint for the purpose of relieving the pain and to save the joint from destruction, on condition that no cutting be done. After thoroughly preparing the parts I aspirated and irrigated the joint with a solution of one to five thousand bichlorid of mercury. The puncture was sealed with collodion, and on the following day temperature and pulse were 100 and 110 respectively. There was no further trouble with the knee-joint, and the patient did not complain of pain, but upon digital contact with the femur there was marked tenderness extending upward as far as the lower third. The tongue was dry and the patient had chilly sensations alternating with sweats. The temperature was 99° and the pulse 100. An operation was urged daily, but not until September 2 could consent be obtained. There was at this time considerable swelling of the limb and fluctuation confined to the lower third of the femur but no discoloration of skin was visible. On the following day, after the usual preparation, an incision beginning at the epiphyseal junction and extending upward for seven inches along the outer side of the shaft was made. A half pint of foul smelling pus was evacuated. The bone was completely denuded of its periosteum over the popliteal space and over its lateral aspect as far up as the center of the middle third. Above the lower fourth the anterior surface of the bone was denuded for one and one-half inches. An opening into the bone was made on its outer side three inches in length, beginning near the epiphyseal border, and with gouge and scoop the infective focus was removed as far as possible, including the diseased marrow. After a thorough irrigation with one to one thousand bichlorid solution, followed by plain sterilized water, the wound was packed with iodoform gauze. A counter incision was made on the posterior side of the leg to secure ample drainage, the limb dressed and placed on a splint. No Esmarch was used, and but little blood lost during the operation. The temperature did not vary much until the evening of the 5th. Following the operation the patient slept well, did not complain of pain, and partook of considerable nourishment. On the evening of the 5th pain again became severe, the temperature rose to 102.4°, and there was marked tenderness, on the slightest contact, to within three inches of the great trochanter. An incision was made over the tender area, the tenderest point being marked previous to the administration of the anesthetic. The periosteum was found firmly adherent to the bone, but upon separating it and opening the bone pus oozed out of the aperture. With a chisel the opening was enlarged, the wound irrigated, and dressed as before. The pain again subsided and the temperature declined several degrees. The wounds were dressed and packed daily and had a healthy appearance. On the 8th there was marked tenderness extending upward to the great trochanter. Pain increased, and temperature again rose several degrees. From this time the boy gradually failed, symptoms of sepsis manifesting themselves. A few days later a large abscess developed about the hip-joint. An incision was made behind the trochanter and a large quantity of pus liberated. This tended to relieve the pain from which the boy was suffering. It was evident that a short time would suffice to end the boy's life unless he could be saved by an operation, but the parents objected to amputation as a means of saving the boy's life. On the 15th the drunken father's consent was obtained to take any measures necessary to save the boy, and on the following day the hip-joint amputation was made by extending the incision previously made for evacuation of the abscess from trochanter upward toward the anterior superior spinous process and downward sufficient to get a proper flap, disarticulating and completing the amputation by circular incision around the thigh. Hemorrhage was completely controlled by elastic tourniquet, the limb having previously been elevated to save as much blood as possible. Owing to the flaps having formed part of the walls of an abscess, they were thoroughly cureted, a large gauze drain introduced, the wound partly closed, dressed, and the patient placed in bed surrounded with hot-water bottles. There was but slight loss of blood during the operation, and stimulants were freely administered while the boy was on the table.

The pulse was now 170, and the patient was in a precarious condition. A sterilized saline intravenous solution of one and one-half pints was given in the right median vein. The pulse, which was almost imperceptible previous to this, became fuller, and nine hours after the operation it had dropped to 110, and the boy was resting comfortably. By 11 P. M., or twelve hours after the operation, the pulse was 190, and almost imperceptible. Another intravenous infusion of nearly two pints brought the pulse to 120 in eight hours. While administering the infusion the pulse gradually became fuller and harder. I asked the boy how he felt. He replied that he had pain in his head. Upon inquiring how his head felt, he said it felt full, whereupon I discontinued the infusion. While I feared hemorrhage from a possible giving away of the femoral artery, I concluded to give him all I possibly dared, as the case seemed utterly hopeless. By noon of the following day gangrene of the inner portion of the anterior flap had set in. The following morning the line of demarkation had formed, and I excised as near as possible all of the gangrenous portions. The day following the operation the boy took two and one-half quarts of milk during twenty-four hours and stimulants were administered freely.

Nothing of event occured until the 27th. In the meantime the boy was rapidly gaining both in flesh and spirits, the temperature remaining about 99°. The wound required daily dressing. On the day above mentioned the temperature rose to 102°, and the patient complained of chilly sensations with pain in the left leg. Upon examination, tenderness was found along the shafts of upper one-third of both humeri and lower third of left femur. The tongue was dry. On the following day tenderness was marked along the whole shaft of the right humerus, two-thirds of the left humerus and the entire femur. These symptoms, together with a dry condition of the tongue, free perspiration, rapid emaciation and a cough, continued until October 2, or about six days, when they subsided, and rapid improvement began. On October 8, after the dressing of the wound was all but completed, a secondary hemorrhage of the femoral artery took place. This was the result of extensive suppuration of the flaps, the artery not having been disturbed in any of the dressings, as I feared such a catastrophe and had continually warned the nurse of its possible occurrence. After considerable difficulty the artery was secured and ligated. There was profuse bleeding and the boy was in a condition of collapse, but under a saline infusion and stimulants he again rallied. Nothing further remains to be recorded in the history of the case, except that the boy made a perfect recovery and has attended school daily since January 1.

Quinine and strychnine were employed throughout the illness. Calcium sulphide was also freely administered from the time the symptoms in the other bones manifested themselves, and to what extent that may have aided in preventing pus formation in them is difficult to determine. That these were centers of infection and subsided without pus formation is scarcely to be questioned. Finally, the following lessons are to be learned from the recital of this case:

(1) That early diagnosis is imperative.

(2) That early operative measures should be undertaken to remove the foci of disease before the periosteum becomes separated and destruction of the corresponding bone ensues.

(3) From its tendency to develop at the epiphyseal junction, the open-

ing should be made as near that junction as possible and sufficiently large to enable one to remove all the diseased focus, including the diseased marrow, and provide for ample drainage. Had an early operation been permitted the probabilities are that the bone and limb could have been saved; as it was, over half of the bone was totally destroyed before operation was allowed.

(4) That intravenous saline infusions are of great value. I believe the boy would have succumbed without them.

One year later a small sinus with discharge was formed in the left femur, but no operative procedure was instituted, and later the wound healed. The boy is now wearing an artificial leg.

In conclusion, I wish to tender my thanks to DOCTORS HANLON, WALLACE, LOWRY, YOUNG, and COMFORT for assistance rendered during the management of this case.

IMPORTANCE OF MAKING A THOROUGH EXAMINATION OF THE THORAX IN ALL SUPPOSED STOMACH DISEASES.*

BY H. B. GARNER, M. D., TRAVERSE CITY, MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE importance of making a careful examination of the thorax in all supposed stomach diseases, is a subject which I have selected for the purpose of showing how easily physicians may be led astray in diagnosis by neglecting to examine the heart of patients who come to them complaining of some disturbance of the stomach.

In the process of digestion there are three factors:

(1) Secretion of the gastric juice.

(2) Movements of the stomach to break up the food and mix it thoroughly with the solvent juice.

(3) Absorption of the products of digestion. Since secretion depends upon the activity of the secreting cells and supply of new material to them from which they may manufacture the secretion, we find that abundant secretion is usually, though not invariably, associated with an abundant blood supply. All the processes which go on in the stomach, namely, secretion, peristaltic action, and absorption, are much influenced by the condition of the circulation. This being true, it is not difficult to understand why a patient suffering from organic heart lesion should complain of stomatic disturbances.

During the past year a number of patients of this class have come to me complaining of impaired gastric digestion, and in a large percentage of these cases I have found the true trouble to be an organic heart lesion, the stomach trouble being merely secondary.

I consider it imperative for physicians to thoroughly acquaint themselves with the normal and abnormal heart sounds. Until recent years I believe the methods employed in making a thorough, scientific examination of patients were greatly neglected. I am pleased to note the interest taken and the thorough course given in physical diagnosis in many of our medical colleges. It is due to this thorough training that many of our recent graduates are able to detect, quickly and accurately, abnormal heart sounds, splenic tumors, cancer of the stomach, and many other abnormal conditions.

*** Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.**

Perhaps the citing of two cases may be of interest to you.

A lady, about forty-five years of age, gave the following history: For four weeks she had been unable to attend to her duties on account of general weakness, pain in the epigastric region, eructations of gas, constipation, loss of appetite, cold extremities, and gradual loss of weight. Patient showed no signs of heart lesion except shortness of breath on exertion. On examination there was found over the apex a whistling murmur during systole, which was transmitted into the axilla. There was also increased area of heart dullness. This murmur was difficult to detect except on very careful auscultation.

On February 15, 1901, a gentlemen told me that he had suffered for a long time with stomach trouble, and asked if I could do something for him. He gave the following history: For several weeks there had been a loss of appetite, strength, and weight. At times patient experienced pain in the epigastric region, cold extremities, slight blueness of lips, and shortness of breath on exertion. This patient said he had not been bothered with cardiac or precordial distress, and apparently did not dream that there was anything the matter with his heart. On examination there was found a distinct murmur over the second intercostal space on the right side, and also a whistling murmur over the apex, showing that the patient was suffering from two distinct heart lesions.

I shall not take time to cite other cases, as there is such a similarity in their history. In conclusion, I will say that I have made it a rule to examine the heart in all cases of supposed stomach diseases of obscure origin, and have found heart lesions to be the true causes in about fifteen per cent.

TRANSACTIONS.

DETROIT ACADEMY OF MEDICINE.

STATED MEETING, APRIL 9, 1901.

THE PRESIDENT, ARTHUR D. HOLMES, M. D., IN THE CHAIR.
REPORTED BY HARRISON D. JENKS, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR HEDLEY WILLIAMSON, of Detroit, read a paper entitled "Fever—A Symptom." (See page 363.)

DOCTOR FLINTERMANN: The views of fever have changed a good deal in late years. Formerly it was considered a disease; now it is supposed to be a process. There is often a rise of temperature in those who are perfectly well. In such cases a rise of temperature is not dangerous. No one knows what fever is. It is a symptom in certain diseases, that is. typhoid fever, scarlet fever, et cetera. Yet the duration is not the same, I would rather see a patient with high temperature and good pulse, than one with low temperature and poor pulse. We cannot say whether fever is caused by the exudates in the body. The fever of pneumonia is very strange. It comes on suddenly and almost as suddenly disappears. The reduction must be due to the formation of an antitoxin. As for the treatment of fever, I believe the essayist is on the right track. Many observers have shown that the danger is not in high temperature.

Doctor Aaron: I believe we know little of the cause of fever. The theory is that just as there is a center of respiration, so there is one of heat production, dissemination, and regulation in the corpus striatum. In typhoid fever, for instance, the absorption of toxic materials acts on the heat centers of the brain. We should regulate the amount of food by the amount of heat it will produce.

Doctor Connor: I was hoping that it might be brought out whether mental and moral disturbances might increase the local temperature, or whether temperature is due to bacteria and to the decomposition of tissues. Heat in physics is a form of motion. It must be the same in the body. There must be a mechanism in the body whereby the transformation occurs. Some day it may be found that the nervous system can cause it without pathogenic germs.

Doctor Manton: I believe that the introduction of the clinical thermometer has been harmful as well as beneficial. There is a distinction between fever and temperature. There can be a high temperature without pathologic changes.

Doctor Metcalf: In pneumonia temperature is an index of the force of the body in overcoming resistance. It is a lack of balance. We are uneasy when we have a patient without temperature. The thermometer is invaluable as an index of the volume of the vital force to overcome irritation.

Doctor Tibbals: It occurs to me that we cannot discuss the subject intelligently because we know so little about fever. The use of the thermometer is invaluable, and except in a few nervous cases there is always a cause for the rise of temperature, even though we fail to find it.

Doctor Gibbes: I am interested in the paper because it is on the right track. The variations in temperatures may be due to an alteration in the blood. All blood is not similarly affected. A slight alteration may allow the bacteria to grow, or it may destroy them.

Doctor Williamson: There is a distinction between fever and temperature. Why should we wait before attempting to lower temperature in typhoid fever until it is about 102°? If rise of temperature is harmful, it should be treated with the same vigor when it is 100° or 101°.

EDITORIAL ARTICLES.

COWS' MILK FOR INFANT-FEEDING.

Infant-feeding is always a subject of great interest and importance, but with the advent of the summer season it assumes again renewed prominence. Were mother's milk never deficient nor pathologic we should likely never hear of artificial foods, but as the human race is constituted we are confused with the great variety of substitutes offered, which, by the way, may be taken as an indication of our ignorance of the whole subject. It is not more than about ten years' time since the correct solution of the problem was thought to be the sterilizing and mixing of cows' milk and water in various proportions to imitate the natural food of the infant. Other artificial foods have also been employed at different periods of the child's life, but the profession have looked with most favor upon cows' milk as a substitute. Gradually, however, there has arisen a feeling of insecurity and finally a sense of disappointment even in sterilized milk. The closest study and finest shading of percentages have often failed to produce normal stools and make the child grow.

Sterilization has little by little given way to pasteurization, but even such treatment of the milk has been found to so change the casein and to so diminish the peculiar germicidal powers of fresh raw milk as to make it less effective. Indeed rickets and other scorbutic affections have been frequently demonstrated in infants nourished by those substitutes exclusively. Accordingly the processes of observation and experimentation have been carried on until now it is insisted that if desirable results are to be obtained we must start with clean, raw milk. Asepsis is to be religiously applied to every detail of the milk producers' art. The pasture, stable, the cow's body and especially the udder and teats, the hands and clothes of the milker, and pail, must be given careful attention and scrutiny. The first few streams of milk should be discarded as they contain large numbers of bacteria. The collected milk should be mixed, aerated, and cooled and kept at a temperature not to exceed 60° Fahrenheit. With such milk at hand the difficulties in infant-feeding are well overcome. The varying richness of milk will necessitate more or less dilution, but superfine percentages are not essential. A correct understanding of the effects of an excess of either fat or casein upon the infant's stomach and bowels will dispose of the other bugbears so generally feared.

ANNOTATIONS.

SIGNIFICANT CIRCULATORY STRUCTURE OF THE OVARY.

PUBERTY, the periodic appearance of menstruation, and the menopause, have all been the sources of numerous interesting hypotheses. Few, however, have rested upon scientific study. The latest notable explanation of these phenomena has come from the pen of JOHN G. CLARK, who submits a short statement in "Progressive Medicine" for June, 1901. The vascular system of the ovary is said to form a tree-like structure. The five largest branches of the ovarian artery enter the base and seek the center of the organ, and then branch out toward the surface. At birth the ovary is encapsuled by a dense fibrous membrane, and holds within the meshes of its stroma myriads of follicles containing enough ova, it is said, to populate a city of many thousand people. Already periodic changes begin, or have begun, in the Graafian follicles. Naturally those nearest the center of the ovary, under the influence of greater vascularization, are the first to undergo cyclic development, but from their position do not escape on the surface. At puberty, however, the follicles near the surface begin to undergo these changes, and their rupture upon the surface constitutes ovulation. If an ovum remains unimpregnated its discharge from the uterus or miscarriage is menstruation. The periodic character of this phenomenon is not yet subject to explanation, except according to PFLÜGE's theory of reflex excitation of the spinal cord due to cumulative influence from the growing follicles. As time goes on an increased deposition of fibrous tissue at the sites of ruptured follicles impairs the vascular system and robs the follicles of the means by which they undergo progressive changes. As a final result the menopause is produced. The author calls especial attention to the close anastomosis, not only between the branches of the ovarian artery but also between the ovarian and uterine vessels, indicating the noticeable attempt of nature in conserving the sexual function.

SPINAL ANESTHESIA.

SPINAL anesthesia is no longer a novelty in medical practice. It has been sufficiently employed to have its advantages and dangers pretty well denoted. It is now sufficiently well recommended to be considered a proper procedure in selected cases. On the other hand, notwithstanding the enthusiastic approval given in certain quarters, the rank and file of the profession merit no criticism for not abandoning long tried and safe methods for new ones, involving as much if not greater risk. In most reports on this subject the reader is inclined to feel that the writer's chief point is to conserve his proposition. It is noticeable that dangerous and unpleasant sequelæ are most frequently reported by those who have not been carried away with the new idea. Routine adoption is advocated in labor and other cases, but until certain knowledge of the means of averting the frequent worrisome consequences is obtained, there is no hope that chloroform and ether narcosis will be abandoned.

CONTEMPORARY.

THE CLAIMS OF HYDROTHERAPY IN MODERN MEDICINE.

[MEDICAL RECORD.]

THE use of water in the treatment of disease is as old as mankind. Its employment in fevers is usually thought to be a purely modern method, and yet, in the Rig-Veda, which is assigned to 1500 before CHRIST, we find it stated that "Water cools the fever's glow." HIPPOCRATES, we are told, held water in high favor as a remedial agent, and the invention of the shower bath is commonly ascribed to ASCLEPIADES, of Prusa in Bithynia (128–56 before CHRIST), though PLINY says that we are indebted to SERGIUS ORATA for the primitive form of this device. Nearly all the ancient medical writers, including CELSUS, ARETAEUS, AGATHINUS, AETIUS, GALEN, HERODOTUS, CHARMIS of Marseilles, RHAZES, and AVICENNA speak with appreciation of the use of water in medicine.

The first attempts at scientific hydrotherapy, as contrasted with the purely empirical methods of the ancients, were made at the beginning of the eighteenth century, when JOHANN SIGISMUND HAHN (1696–1773), a Silesian physician, published his work, "Unterricht von der Wunderbaren Heilkraft des Frischen Wassers." JAMES CURRIE (1756–1805), originally an American merchant, who became a physician in Liverpool, was the first to use water in the treatment of febrile diseases according to modern methods, that is, with regard to its effect on the pulse and the temperature. With the ascendance of rational therapeutics, the names of ANDREAS PLENINGER, F. RUNGE, and WILHELM WINTERNITZ became coupled with hydrotherapy, and certain forms of "water cure" became the popular rage as the result of the efforts of a Silesian peasant, VINCENZ PRIESSNITZ (1799–1851), and of a German country priest, SEBASTIAN KNEIPP (1822–1897).

In America hydrotherapy was first introduced in 1843 by DOCTOR RUSSELL THATCHER TRALL, of Vernon, Connecticut (1812–1877), and DOCTOR JOEL SHEW, of Providence, New York. Today no name is more closely associated with hydrotherapy in America than that of DOCTOR SIMON BARUCH, of New York.

At a recent meeting of the Philadelphia County Medical Society, DOCTOR BARUCH delivered an address entitled "Lessons of a Decade in Hydrotherapy," in which he pleaded for a wider diffusion among physicians of accurate knowledge concerning the effects of cold and heat, as applied through the medium of water, upon the human system in health and disease. No one who is interested in the progress of medicine can help joining in this appeal. Every physician uses water as a remedy to a certain extent, but we agree with DOCTOR BARUCH when he says that many still do so in a haphazard or purely empirical manner. The physiological effects of water used at different degrees of temperature and pressure and for varying intervals of time are now thoroughly understood, thanks to the researches of WINTERNITZ, BRANDT, RHOVIGI, BARUCH, and others, and there is no more excuse for empiricism in hydrotherapy than there is for the haphazard ways in the use of drugs whose physiologic effects are known.

The trouble has been heretofore that some of our best clinicians have looked askance upon any attempt to apply hydrotherapy in a way that would seem to place drugs and other methods of treatment in the background, because "water cure" has so often been associated in their minds with quackery. It is time to recognize that hydriatrics rests upon a secure scientific basis, and that whilst rational therapeutics repudiates any attempt to make water the only remedy for every ill, the physician who wishes to cure his patients cannot afford to neglect this arm in the battle against disease.

It is therefore the duty of practitioners to become acquainted with the theory as well as the practice of hydrotherapy, to further the teaching of this branch of medical art in a thorough and practical manner in the medical schools, and to strive for the correction of the popular misconceptions regarding the use of water as a remedial agent.

MEDICAL NEWS.

THE MEDICAL SECTION OF THE FRATERNAL CONGRESS.

DOCTOR THOMAS MILLMAN, of Toronto, Ontario, presided in the medical section of the National Fraternal Congress which recently convened at Detroit. In the presidential address the medical department of fraternal insurance companies received considerable attention. The fee of one dollar each for medical examinations was deemed niggardly small, while the practice of collecting the fee from the applicant instead of from the association was strongly advocated, features cited in favor of the change being that thorough examinations would ensue and the interests of the association thereby be subserved. The belief was expressed that medical examiners would be far more efficient if appointed and retained in office than could be expected by subjecting them to the present elective system. Other physicians contributed papers as follows: Doctor M. E. Brown, of Chicago, "The Medical Examiner in Fraternal Insurance;" Doctor Emma D. Cook, of Detroit, "How May we Reduce the Death Rate from Cancer and Consumption;" Doctor F. A. Smith, Zanesville, Ohio, "Heredity and Its Value as a Factor in Life Insurance;" Doctor J. T. Craig, Kansas City, "The Modern Medical Director;" Doctor Ira W. Porter, Omaha, "Location in its Bearing on Life Insurance."

MINOR INTELLIGENCE.

THE mayor of McKeesport, Pennsylvania, of iron-workers'-strike fame, is Doctor Robert J. Black, a graduate of the Baltimore College of Physicians and Surgeons, in 1881.

THE exhibition of giants recently held at Rouen, France, included a Frenchman nine feet and two inches in height, who is betrothed to an English lass perpendicularly elongated to eight feet and three inches.

THE Roentgen Society of the United States held its second regular meeting in Buffalo, New York, September 10 and 11, 1901. The program contained the titles of twenty-four papers that collectively embraced every phase of skiagraphy, one being by Doctor R. Jedlicka, of Prague, Bohemia.

ATTENDANTS upon the dowager empress of Germany during the illness which culminated in her demise have been rewarded by Emperor William. The title of privy sanitary counselor has been conferred on Professor Ranvers; an order has been bestowed on Doctor Spielhagen; and Red Cross medals have been presented to the six ladies-in-waiting.

THE Manila Board of Health is paying one and one-half cents for the carcass of every rat brought to headquarters. An appropriation of $2,500 will be expended as bounty on the lives of the pestiferous rodents in the hope of exterminating the entire tribe and thereby eradicating the plague from Chinese habitations in the metropolis of the archipelago.

DOCTOR JUAN SANTOS FERNANDEZ, of Havana, the efficient president of the Third PanAmerican Medical Congress, which convened in that city last February, was presented with a gold medal on the 24th of June, the occasion being the feast day of the recipient. The gift emanated from a number of colleagues who elected this method of signifying their appreciation for the labors of the doctor in behalf of the success of the congress.

STATE DAIRY COMMISSIONER MONSON, of Colorado, has volunteered to become a subject for experimentation in order to determine the correctness of Koch's declaration that bovine and human tuberculosis are dissimilar, and that this disease cannot be transmitted from animal to man. Believing in the nonidentity of the two germs, this official will submit to inoculation with the tubercle bacilli of bovine tuberculosis and patiently await results.

The American Association of Orificial Surgeons met in Chicago, September 18 and 19, 1901, under the presidency of Doctor W. E. Bloyer, of Cincinnati. Lectures and papers were contributed by some of the most prominent orificial surgeons in the country, and Professor Pratt, of orificial fame, conducted a clinic during the week of the meeting, the first patient receiving attention on the 16th of the month. The secretary was Doctor Henry C. Aldrich, of Minneapolis.

Rome will be the seat of a congress of historic science in the spring of 1902. The program contemplates the discussion of all subjects essaying historic nature, and therefore, the history of medicine may be expected to receive a degree of attention commensurate with the antiquity and progress of the science. The committee of arrangements has requested the United States Government to send delegates and extends an invitation to American scientists, men of letters, and artists to participate in the deliberations.

Doctor Calvin R. Elwood, of Menominee, read a paper entitled "Asthenopia—Accommodative and Muscular," at the recent semiannual meeting of the Upper Peninsula Medical Society, which will be published in an early issue of The Physician and Surgeon. The newly-elected officers of this medical body are as follows: President, Doctor Walter R. Hicks, of Menominee; vicepresidents, Doctors A. B. Simonson, of Calumet, F. E. Fletcher, of Lake Linden, and James H. Bogan, of Mackinac Island; secretary-treasurer, Doctor S. Edwin Cruse, of Iron Mountain.

Doctor Louis Knapp, of Saint Louis, Missouri, has volunteered, according to the daily press, to risk his life with a Chinese leper in an isolation hospital of that city for the purpose of studying the disease. He has left his wife and four children, and intends remaining in the service of the Mongolian and science until the messenger of death announces that his potions are no longer required. He was chosen from five applicants. The doctor formerly lived in Detroit, where he practiced for two years after graduating from the Michigan College of Medicine and Surgery in 1890.

RECENT PUBLICATIONS.

REVIEWS.

INFANT-FEEDING IN HEALTH AND DISEASE.*

This is a work that deserves more than ordinary notice. Theories have been disregarded. Facts only are given space. The author has, however, considered every detail of infant-feeding and his rich experience has enabled him to present the subject in a most acceptable manner.

*By Louis Fisher, M. D., Attending Physician to the Children's Service of the New York German Poliklinik; Bacteriologist to Saint Mark's Hospital; Professor of Diseases of Children in the New York School of Clinical Medicine; Attending Physician to the Children's Department of the West-side German Dispensary; Fellow of the New York Academy of Medicine, et cetera. Contains 52 illustrations, with 16 charts and tables, mostly original. Three hundred and sixty eight pages, 5¾ x 8 inches. Neatly bound in extra cloth. Price, $1.50, net. Delivered. F. A. Davis Company, Publishers, 1914–16 Cherry street, Philadelphia, Pennsylvania.

URINARY DIAGNOSIS AND TREATMENT.*

This book possesses the merit of furnishing the essentials of urinary diagnosis and also that of the significance and correction of faulty conditions as evidenced in the urine.

*By J. W. Wainwright, M. D., Member of the American Medical Association, New York State Medical Association, New York County Medical Association, et cetera. Illustrated with numerous engravings and colored plates. Pages, 140. Price, $1.00 net. G. P. Engelhard & Company.

MANUAL OF VENEREAL DISEASES.*

The secret of the author's success with former editions of this manual may be regarded as comprised in his belief that books are read in inverse proportion to their length. It is to be expected that a similar degree of popularity will attend the seventh edition, as it is the older manual with the same brevity and practical character brought up to date.

*By F. R. Sturgis, M. D., revised and in part rewritten by F. R. Sturgis, M. D., and Follen Cabot, M. D. P. Blakiston's Son & Company, Philadelphia, 1901.

TEXT-BOOK OF HISTOLOGY.*

This rather pretentious work of about five hundred pages may be accepted by the profession in America as a comprehensive treatise and reference book on the subject of histology. We are not familiar with the German edition and are unable to state whether its excellencies are to be credited to author or editor or to both. We do know, however, how difficult it is to adapt even a good work to a foreign language, and therefore, credit the editor with much of its success. The subject matter is systematically arranged and treated in good style. Illustrations are profuse and reflect favorably upon publishers as well.

*By A. A. Bohm, M. D., and M. von Davidoff, M. D., of the Anatomical Institute of Munich. Edited with Extensive Additions to both text and illustrations by G. Carl Huber, M. D., Junior Professor of Anatomy and Director of the Histological Laboratory in the University of Michigan. Authorized translation from the second revised German edition by Herbert H. Cushing, M. D., Demonstrator of Histology and Embryology in the Jefferson Medical College, Philadelphia. Price, $3.50, net. W. B. Saunders & Company, Philadelphia.

PRINCIPLES OF SURGERY.*

This classic work comes to hand after a second revision. The first edition of it was the first consistent statement of the new surgical philosophy, and came as a revelation. It sprang into use in many colleges, and was everywhere received as a standard treatise. Its truths are still the same. Few changes have been needed, but some additions, chiefly chapters on "Degeneration" and "Blastomycetic Dermatitis," have been made. From the standpoint of the teacher it may be regretted somewhat that in this edition much historical matter has not been omitted.

*By N. Senn, M. D., Ph. D., LL. D., Professor of Surgery in Rush Medical College in Affiliation with the University of Chicago; Professorial Lecturer on Military Surgery in the University of Chicago; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief to Saint Joseph's Hospital; Surgeon-General of Illinois; Late Lieutenant-Colonel of United States Volunteers and Chief of the Operating-Staff with the Army in the field during the Spanish-American War. Third edition. Thoroughly revised with 230 wood-engravings, half-tones and colored illustrations. Royal octavo. Pages, xiv—700. Extra cloth, $4.50 net; Sheep or half-Russia, $5.50, net. Delivered. Philadelphia: F. A. Davis Company, Publishers, 1914–16 Cherry street.

PROGRESSIVE MEDICINE—VOLUME II, SERIES OF 1901.*

THIS is a most valuable volume. The first one hundred and fifty pages are taken up with a consideration of hernia and other abdominal surgery by Doctor William B. Coley. Doctor John G. Clark follows with more than one hundred pages devoted to various important topics in gynecology. Doctor Alfred Steugel contributes an equally interesting article on "Disease of the Blood and Ductless Glands," "The Hemorrhagic and Metabolic Diseases." The subject of Ophthalmology is reviewed by Doctor Edward Jackson, whose authorship equally recommends the work. This series is the one thing that progressive doctors of medicine cannot afford to do without.

*A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 460 pages, with 81 engravings and one full-page plate. Lea Brothers & Company, Philadelphia and New York. Price, $10.00 per year.

SYSTEM OF PRACTICAL THERAPEUTICS—VOLUME I.*

THE profession is already acquainted with this extensive work through its first edition. This volume takes up General Therapeutic Considerations, Prescription Writing, Remedial Measures Other than Drugs, Preventive Medicine, Diathetic Diseases and Diseases of Nutrition. The list of contributors includes H. C. Wood, Joseph P. Remington, H. B. Baker, I. B. Yeo, E. M. Hartwell, J. K. Mitchell, A. D. Rockwell, Simon Banech, S. E. Jolly, J. K. Crook, R. E. Moore, W. M. L. Coplin, S. J. Meltzer, James Stewart, James Tyson, Ralph Stockman, Edward Martin, L. F. Flick, Walter Chrystie, and C. E. Banks. The work is almost encyclopedic. It will serve as a complete reference work, but is withal practical and therefore useful.

*Edited by Hobart Amory Hare, M. D., Professor of Therapeutics, Jefferson Medical College; Physician to Jefferson College Hospital, et cetera, Philadelphia. New second edition, thoroughly revised. In three very handsome octavo volumes, containing 2593 pages, with 427 engravings, and 26 full-page colored plates. Per volume, cloth, $5.00, net; leather, $6.00, net; half morocco, $7.00, net. Lea Brothers & Company, Publishers, Philadelphia and New York, 1901.

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

AN HISTORIC SKETCH OF THE APPENDIX VERMIFORMIS.*

By Robert C. Bourland, A. B., M. D., Ann Arbor, Michigan.
INSTRUCTOR IN ANATOMY IN THE UNIVERSITY OF MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

Prior to the sixteenth century the exact nature of the vermiform appendix was a matter of much doubt and a great deal of discussion, largely on account of the fact that the leading anatomists of that period, for the most part, followed blindly the statements of Aristotle, Galen, Avicenna and others, to the effect that the cecum and the appendix were one and the same structure. Among the early writers Morgagni, in his "Epistola Anatomica," has done, perhaps, the most toward giving a complete summary of preexisting ideas concerning the appendix, and bringing some order out of the confusion which had existed before his time. This work practically completes the history of the vermiform appendix up to the middle of the eighteenth century.

Morgagni holds it to be evident that the earlier anatomists did not designate the vermiform appendix by the name cecum, in spite of the opinions of his predecessors, for, says he, "What reference is made to the slender appendix by Aristotle when he writes, 'something blind and swollen,' or by Galen's statement that the cecum is fat like a belly and made for the purpose of receiving excrement?" Hoffmann, one of the fifteenth century anatomists, declares that Galen was in error,—that while his description applies to the cecum in pigs, in man this organ is very slender and worm-like.

Sylvius, coming later, had so firm a belief in the infallibility of Galen that he seeks to reconcile fact and fiction by maintaining that either the appendix has grown onto the cecum, or that a portion of the cecum has degenerated into the appendix, *since the time of* GALEN. This latter view, save in the matter of time, is not so very far from the truth.

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* Read before the Ann Arbor Medical Club.

Among the ancients, AVICENNA, THEOPHILUS, ZERBUS and MUNDINUS, besides GALEN, described the cecum as we know it today, and there were persistent attempts up to the sixteenth century to reconcile their accounts of the cecum with the shape and general appearance of the vermiform appendix. In 1523 BERENGARIUS CARPENSIS made a great step nearer the truth by emphatically stating that the Galenic cecum and the vermiform appendix are different structures. He gave to the appendix the name "intestinum cecum," and declared his belief that a part of the Galenic cecum had become contracted into the appendix by the rapid pushing out of intestinal contents from the cecum in infancy.

MASSA, who follows BERENGARIUS, agrees with him in the main, but says that in his opinion the contraction of the portion of the cecum which becomes the appendix is due to the diarrheas of infancy, which do not allow fecal matter to remain in that cecum long enough to keep it permanently enlarged throughout its whole extent.

(As MORGAGNI says, " Both were wrong in their statements as to the cause of the contraction.")

We are indebted to BERENGARIUS for the first description of the appendix itself apart from the cecum. He says: " It is something added on, about three inches long and with a lateral orifice one finger's breadth across."

ANDREAS VESALIUS (1543) is the first to use the word "appendix," in referring to the structure, and he also compares it to a worm wound around the large intestine, but is withal so thoroughly a follower of GALEN that he believes the appendix to be the " cecum" of the ancients.

FALLOPIUS, in 1560, brings out the worm-like character of the appendix, COLUMBUS, in the same year, applies to it the name " appendix ceci," and VIDUS VIDIUS, in 1561, gave to the structure the name by which it is known today,—" appendix vermiformis." In further support of the differentiation of the cecum and appendix, DIEMERBROEK maintains that they are distinct structures and that the cecum is the first enlargement in the large intestine.

GLISSON, a little later, holds that the cecum and appendix have an identical structure and includes them both under the term " cecum."

It was not until early in the eighteenth century that VERHEYEN, MORGAGNI and others decided definitely that the cecum of the ancients is the beginning of the colon, and that the appendix vermiformis is something different, of which the older writers had taken no cognizance.

Among other important steps in the development of information regarding the appendix may be mentioned the researches of SANTORINI, who, in 1724, first called attention to the great variation in the position of the appendix in the body, and also to the fact that at times it is absent; the discovery by SABATIER, in 1791, of the mesoappendix, and the presence of "mucous follicles" in the interior of the organ; and the results reached by MARJOLIN early in the nineteenth century, when he proved that the structures of the appendix and of the large intestine are the same, and also made some further advances in the nature of the mesoappendix.

As knowledge grew concerning the anatomical nature of the appendix, speculation concerning its functions developed apace, and it is here that we find the greatest variety of ideas and conclusions. BARTHOLIN, in his work on " Human Anatomy," published In 1673, devotes some space to a summary, more or less complete, of the statements of earlier writers concerning the functions of the appendix. Among the views which he mentions are the following:

(1) That the appendix is a reservoir for fecal water in the fetus.

(2) That it is a reservoir for urine in the fetus.

(3) The appendix holds accumulated fecal matter, "lest, by continually urging to be extruded it should cause pain." In support of this view, BARTHOLIN states that he has known of feces and cherry stones having been held within the appendix for forty days.

(4) According to SCHENCK, the appendix is a reservoir for chyle, and as such deserves the name "torcular chyli."

Both of the latter ideas receive some support from MAURICE HOFFMANN, who states that he has opened appendices containing bits of fecal matter and fermented chyle.

(5) According to HIGHMORE the appendix vermiformis is a sort of diverticulum, in which, during long periods of constipation, intestinal gases accumulate, so that the integrity of the colic valve may not be threatened by direct pressure from these gases.

(6) SIMON PAUL maintains that the appendix is the natural receptacle for flatus during digestion and especially for gases arising from wind-producing food. "For," says he, "pigs subsisting upon the flatulent acorn have a very large cecum, and cranes, which by nature live upon barley, which is very wind-producing, have double ceca."

In commenting upon this last view, BARTHOLIN says: "I will confirm this ingenious theory by relating an actual experience of mine with man. A lady of my acquaintance complained of a sort of murmuring and windiness in the region of the appendix whenever she felt impelled to pass flatus or deposit fecal matter."

One of the most bizarre ideas concerning the probable function of the appendix is that advanced by SANTORINI, in 1724. He claims that the appendix is the natural habitat of intestinal worms, basing his conclusions on the fact that on one occasion he discovered three round worms in the appendix. A short quotation from SANTORINI's description may not be out of place: "It is necessary for these animals to have a warm and quiet place in which to live and it is not at all improbable that the vermiform appendix provides such a refuge, for they could not live where there are powerful peristaltic movements or a large quantity of fecal matter. They breed in the appendix in much the same manner as fish lay their eggs in tranquil waters rather than in flowing streams."

OKEN (1806) claimed that the appendix was the remainder of the allantois.

In our own time it may be well to mention the somewhat remarkable ideas of GASTON and KOHLBRUGGE. The former, in 1888, says: "In the absence of other explanation of the peculiar odor imparted to the contents of the colon, it is fair to suppose that this modification comes from the influence of the vermiform appendix either by some chemical or vital process." Again, "Gaseous emanations of hydrogen sulphid, antiseptic in character, may come from the appendix and preserve the intestinal contents from decomposition during their passage through the colon."

KOHLBRUGGE's hypothesis, briefly stated, is that the appendix is a culture tube for the bacillus coli communis, from which new colonies may be introduced into the large intestine whenever, by any means, such as a severe diarrhea, the colon has been deprived of this bacterium.

We can now see, by the light of comparative anatomy, that the appendix vermiformis is the remains of a former much more capacious cecum seen today in herbivores. It is the true cecal apex, the growth of which is not commensurate with that of the rest of the cecum. The presence of the appendix and the size of the cecum may be considered as a more or less accurate index of the food habits of different organisms. Thus the primates, the only class of animals in which the appendix is present, occupy a middle ground between the herbivores, whose enormously developed undifferentiated ceca are rendered necessary by the coarse quality of their food, and the carnivores, in which class the appendix is not apparent and the cecum extremely small. SIR FREDERICK TREVES has very aptly termed the appendix "an anatomical protest against vegetarianism."

That the appendix is a rudimentary structure, retrograde in character and functionless is made apparent by comparison with the ceca of lower forms, from its poor blood supply, its variability in size and position in different individuals, its extreme susceptibility to disease, from the fact that it suffers a marked decrease in size during the life of the individual, and that its lumen is often occluded or partially occluded by fatty infiltration and increase of connective tissue in its walls.

The fact that the appendix is, as a rule, actually larger in the child than in the adult was, I believe, first noticed by LAURENTIUS, in 1606, and was also observed by MORGAGNI, HUNTER, HALLER and others of the eighteenth century anatomists.

The researches of RIBBERT and ZUCKERKANDL have gone far to show that the occlusion, total or partial, of the appendix is a normal physiologic process, occurring more frequently in subjects of advanced age, and pointing definitely to the retrograde character of the organ.

GASTROENTEROSTOMY AND INTESTINAL RESECTION.*

BY WILLIAM FULLER, M. D., GRAND RAPIDS, MICHIGAN.

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INTESTINAL obstruction unless relieved inevitably terminates in death. If the obstruction is chronic and incomplete, though protracted, it is none the less fatal, owing to fermentation of the delayed contents of the bowel, absorption of toxins, dilation above the obstructed portion, and final exhaustion of the patient. Should the obstruction be acute or chronic and beyond the power of medicine, the case is one which belongs to the province of surgery. If the diagnosis cannot otherwise be made, the abdomen should be opened and the conditions treated according to the exigency. In an operative procedure involving abdominal section the greatest judgment and ingenuity are essential. The operation should be performed as expeditiously as possible and with as little handling of the viscera as necessary. If no bleeding exists at the time of closing the abdomen, the remainder of a little blood in the abdominal cavity is of no consequence and is not so dangerous to the patient as an effort to make a fastidious toilet, since the blood, being aseptic, is frequently absorbed in large quantity by the peritoneum.

The experience of the writer in the surgical treatment of obstruction includes seven cases.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY at its Battle Creek meeting.

The first operation, which I preformed upon the pylorus, was made in the Union Benevolent Association Hospital, at Grand Rapids, twenty-three years ago. The case was one of fibrous contraction in which the stomach was enormously dilated. The contracted portion was divided by a longitudinal incision and stitched together so as to enlarge the opening between the stomach and the duodenum. The patient was a woman about thirty-five years of age and survived the operation five years, during which time she enjoyed comparatively good health, but finally died of an acute peritonitis followed by an effusion in the abdomen after a few weeks' illness.

The second case was that of a woman fifty-four years old, with a carcinoma of the pylorus and the adjacent portion of the stomach. The pylorus and about one-third of the stomach were removed. The patient suffered considerable shock on account of the operation from which she revived, but died in fourteen days of exhaustion caused by inability to take food. There was no suppuration and the wound healed rapidly, as is usual in most cases of cancer.

The third case was that of a woman fifty years old, who had carcinoma of the pylorus. An anastomosis was made between the stomach and the first knuckle of the small intestine by means of a Murphy button. The patient was much relieved for a time, enjoyed a season of good health and digestion, and grew fleshy, but died in fifteen months of an extension of the original disease. The button was retained in the stomach but gave her no uneasiness.

The fourth and fifth cases were those of men, aged respectively fifty-five and sixty years, and were operated upon on the same day, February 23, 1901. The former made an uninterrupted recovery and at the present time is completely relieved of his former distress, having a good appetite and digestion, and has improved in appearance, being strong enough to return to his work, which is that of a mechanic. The latter died on the fifth day after the operation. The man had suffered no shock and was cheerful to within a few hours before his death, having taken light food for which he had an appetite and which caused no pain nor indigestion. The patient was slightly jaundiced for a month previous to the operation, and eight hours before his death he became deeply jaundiced. His urine was heavily loaded with bile and contained a small quantity of albumen. He died in a comatose condition. The post-mortem examination showed a union of the divided tissues, an absence of pus, and the artificial opening between the stomach and the intestine patent and united. A large ulcer was found in the duodenum upon its upper wall which was adherent to the gall-bladder and the under surface of the liver. The gall-bladder was entirely obliterated and a mass of fibrous tissue surrounded the bile ducts, while the liver was in a state of fatty degeneration.

The sixth case was that of a delicate-looking man, forty years of age, very anemic, and having been ill for several months, he was also emaciated. His disease as well as that of number four, was carcinoma of the pylorus. This man suffered no shock from the operation, which was performed March 2, 1901, made a rapid and uninterrupted recovery and is completely relieved of distress in the stomach. He enjoys his meals and has a good digestion, claiming to feel as well as at any time previous to the operation. The flesh and appearance are much improved and the man is now attending to his business, which is that of a saloon-keeper.

The seventh case was that of a man forty-five years of age, greatly emaciated and exhausted by long, continued vomiting and flatulent, sour eructations. There was a distinct tumor detected on the left side of the median line and the stomach was very much dilated, its lower border extending to the crest of the ilium. A gastroenterostomy was made April 29, and the patient died on May 6, the eighth day after the operation. No relief was obtained by the operation, but the vomiting of a greenish fluid continued, some of which was discharged by the bowels. The postmortem examination showed the wound to be united and a small amount of pus in the path of the stitch which united the stomach and the intestine. The stomach was filled with a greenish fluid as were also the duodenum and the gall-bladder. This man was of an exceedingly nervous temperament, and was very restless from the time of entering the hospital until death.

Upon examination of the contents of the stomach after test meals in these last four cases, but one showed an abundant quantity of hydrochloric acid, only a trace being found in the sixth case, which supports the observation that a great diminution or entire absence of the quantity of hydrochloric acid indicates cancer of the stomach, while its presence in normal quantity contraindicates this disease.

Gastroenterostomy is a comparatively simple operation. The method used in the cases described was an incision in the median line above the umbilicus, about six inches in length. In three of the cases a lateral incision was extended across the right rectus muscle from the upper end of the vertical incision for the purpose of exploring the extent of the disease. The omentum was pushed over toward the left side, its right margin being easily found. The next step in the operation is to place the left forefinger upon the anterior wall of the stomach while the thumb is passed beneath the transverse colon down to its mesentery. The finger and thumb are now approximated so as to bring the posterior wall of the stomach against the upper surface of the mesentery of the colon. Avoiding the vessels in the mesentery, an opening is carefully scraped through it with the fingernail or a blunt instrument, the stomach is pushed through this opening so as to form a hernial protrusion through the mesentery of the colon, and the first knuckle of the small intestine is found by moving the finger along the under surface of the colomesentery until the first part of the jejunum is reached. This is drawn out and held by an assistant. An opening of proper length is cut into the posterior wall of the stomach, and a similar one into the small intestine. These openings are approximated and united by a continuous suture, which includes first, the mucous and peritoneal coats of both the intestine and the stomach and then the peritoneal coats. The Lembert suture is the one I employ. The omentum is replaced and the abdomen closed.

Beginning with a little hot water given to the patient twelve hours after the operation, a liquid diet is gradually increased for about a week, when sold food may be given, according to the patient's desire.

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It is not intended that this paper shall discuss the subject of intestinal resection, but I wish to report a case, the chief interest of which is the large amount of the small intestine removed at the operation. Upon a former occasion I reported a case before this society in which a tumor, together with thirteen inches of the ileum, the cecum, and about one-half of the ascending colon were removed. Another case is one in which seven feet and nine inches of the small intestine were removed, and as in a former case the operation was followed by a complete recovery, without rise of temperature or any other inconvenience than would arise from an ordinary anastomosis of the intestine. The history of the case was as follows:

I was hurriedly called to attend a woman at the Union Benevolent Association Hospital who was said to be suffering from a rupture of the uterus. The woman was about twenty-eight years of age, distressed with pain and in extreme shock. Upon removing a cloth from the vagina, a quantity of the small intestines was expelled that were detached from the mesentery and protruding from the os uteri. The abdomen was immediately opened and a rupture of the fundus was discovered through which the mesentery and intestine passed into the cavity of the uterus. Both ends of the protruding intestine were severed above the rupture of the uterine wall and were again united after removing through the vagina that part of the intestine which had been detached. The mesentery was left in the ruptured wound of the uterus, which contracted around it and formed an excellent ligature, the blood was removed and the abdomen closed. The woman's condition rapidly improved and the pain and vomiting ceased as soon as the intestinal obstruction was relieved by the operation. A fetid discharge came from the uterine cavity, a few days after the operation. The patient was convalescent and left the hospital in about three weeks. She is in excellent health, doing her own housework and apparently suffers no inconvenience from the shortening of the intestinal canal to the amount before mentioned.

MODERN METHODS IN COUNTRY PRACTICE.*

By ERNEST W. TONKIN, M. D., Edwardsburg, Michigan.

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It is necessary for the country practician to be, as it were, a general specialist. In the past this was not a difficult task, but specialists and specialties are increasing, and every specialty has produced a host of special methods of diagnosis and treatment along its special line. Modern chemic and bacteriologic research has evolved such vast diagnostic and therapeutic resources that it is impossible for any one person to master the whole domain of medicine.

If a physician elects the specialty of stomach diseases, he is confronted with an array of gastroscopes, gyromeles, intragastric electrodes, stomach buckets, et cetera. If he essays to make blood examinations, even as an aid to general diagnosis, an understanding of hemocytometers, hemoglobinometers, hematokrits and ferrometers is necessary. Every specialty has produced such a voluminous literature and such a complexity of terms that many simple and valuable methods of diagnosis and treatment have not come into as general use as they deserve, especially in country practice. In evidence of this fact we see that laboratories for the sole purpose of making chemic examinations to aid physicians are on the increase. I do not mean to say that such laboratories should not exist, for I think they serve a very valuable purpose. I contend, however, that the country practician should make all the ordinary microscopic and chemic examinations of the blood, urine, pus, and stomach contents. An intelligent patient will understand that the family doctor may not be prepared to make a thorough ophthalmoscopic examination or to secure a skiagraph of a fracture, but he will not understand the necessity of sending sputum, blood, or pus away for examinations.

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* Read before the Michigan State Medical Society at its Battle Creek meeting

It is not necessary to equip a private laboratory or to apportion a vast amount of time for the accomplishment of such work. In fact many of the examinations require only a trifle more time than is consumed to prepare a specimen for transportation, to which latter should be added the cycle that must intervene before a report can be received if the specimen is sent away.

For sputum examination no apparatus is necessary other than a properly equipped microscope, which should be considered almost as essential a part of the modern physician's armamentarium as his stethoscope or thermometer. The process of staining with carbolfuchsin, decolorizing with dilute acid. and counterstaining with methylene-blue, requires but a few minutes to accomplish. If a physician cannot make such examinations himself, it is better to send specimens away than to neglect important diagnostic detail. One early diagnosis of tuberculosis is worth more than a dozen late ones.

Blood examinations are neglected unnecessarily. Sufficient evidence has been brought forward to show that with our present knowledge of hematology an exact count of the red and white cells is not of so much practical utility as has been supposed, consequently a Thoma-Zeiss or other counting apparatus may be very well dispensed with for ordinary work. An extensive leucocytosis may at once be detected by examining a thin film of blood under an ordinary cover-glass. Pernicious anemia is characterized by the striking variations in size of the red cells, by the presence of nucleated red cells of excessive size, and by the tendency of all of the colored cells to stain a dark brown with eosin. Chlorosis is differentiated by the red cells taking the red stain only slightly.

The quantity of hemoglobin can be estimated with sufficient accuracy for all ordinary purposes by means of Hammerschlag's specific gravity method. Nearly fill an ordinary urinometer cylinder with a mixture of three parts of benzol and one part of chloroform, then allow one drop of blood to fall directly from the finger into the mixture. This way is preferable, as there is less danger of air being mixed with it than if drawn in a pipette and expelled. If the drop sinks, add chloroform; if it floats, add benzol, a few drops at a time, close the mouth of the cylinder with the hand and invert after each addition. When the drop remains suspended, take the specific gravity of the mixture with the urinometer in the usual way.

A specific gravity or 1033 to 1038 represents 25 to 35 per cent. of the normal amount of hemoglobin.

A specific gravity of 1038 to 1045 represents 35 to 45 per cent.

A specific gravity of 1045 to 1048 represents 45 to 55 per cent.

A specific gravity of 1048 to 1050 represents 55 to 65 per cent.

A specific gravity of 1050 to 1055 represents 65 to 75 per cent.

A specific gravity of 1055 to 1057 represents 75 to 85 per cent.

A specific gravity of 1057 to 1060 represents 85 to 95 per cent.

Such examinations as these and the one for the plasmodium malariæ may all be made by a person without any special apparatus, and by means of them reliable information may be obtained bearing on diagnosis and prognosis in a variety of diseased conditions. Blood examinations are destined to become a much more important factor.

A thorough chemic analysis of the stomach contents may not be ordinarily practicable to the general practician, but a double test meal often answers a very useful purpose without an analysis. At 8 A. M. give a meal consisting of three ounces of beef, one soft-boiled egg, one ounce of boiled rice, a slice of bread, and a half pint of milk. At noon give a roll or a slice of bread with a pint of milk. At 1 P. M. withdraw the stomach contents with a stomach tube or by emesis. On inspection, hypochlorhydria is suggested by the presence of some beef and egg and the absence of rice and bread; hyperchlorhydria by the absence of beef and egg and the presence of rice and bread. If the whole breakfast has disappeared, digestion is probably normal. If, on the other hand, the entire meal is present, gastric atrophy with lack of motive power is indicated. The addition of a few drops of a one-half per cent. alcoholic solution of dimethyl-amido-azo-benzol demonstrates the presence of free hydrochloric acid by turning a cherry red, and its absence by a bright yellow.

A specialist in diseases of the stomach will not consider this a very complete examination, but in many cases it affords sufficient data on which to formulate efficient treatment and render a more intelligent prognosis, which is better than labelling every case "dyspepsia" and treating it correspondingly.

Before considering the question of treatment, I will say that I do not think we pay sufficient attention to early diagnosis. The classic symptoms of many diseases do not appear early enough to be of much practical benefit. If the physician waits for the coffee-ground vomit and the typical cachexia to develop, there is little that can be done for cancer of the stomach. If he waits for a painful tumor and a foul discharge, it is usually too late to operate for carcinoma of the uterus. If he waits for pronounced physical symptoms before diagnosing tuberculosis, treatment is generally unavailing. It is doubtful if a cure can be found for advanced cases of either of these diseases, but when possible to make an extremely early diagnosis, a cure can doubtless be effected in nearly every case. The diagnosis of disease in its incipiency is the line along which future medicine will lay its claim to being an exact science, and no physician is doing his duty who neglects to employ every method that tends to make the early recognition of pathologic conditions easier. There is no doubt that more attention is paid to new methods of treatment than to new methods of diagnosis.

Lacking, as the country doctor does, the aseptic surroundings and accommodations of a hospital, the help of a trained nurse, and the facilities for obtaining needed apparatus at short notice, it is often necessary to devise both apparatus and methods. I will describe one such contrivance that has worked very nicely for intracellular infusion of saline solution. Take a pint or quart bottle having a mouth about one inch in diameter to which is fitted a rubber cork having two holes. One hole carries a small glass funnel, the other a glass tube at right angles above the cork. To this is fastened three or four feet of rubber tubing carrying at one end a slim aspirating needle. Place some sterilized absorbent cotton in the mouth of the funnel to act as a filter for the previously sterilized saline solution, taking care that the cork is loose enough to permit escape of air. When the bottle is full, fit the cork down tightly and pour the solution into the funnel until it runs from the needle. Allow it to run until the funnel is empty, when the apparatus is ready for use. The glass parts should be previously sterilized by heat, and the rubber by a solution of formaldehyde. The cotton in the funnel had better be replaced by a fresh tuft of dry sterile cotton. The saline solution may be made by putting fifty grains of pure salt to the pint of water, although the use of tablets containing calcium, potassium, and sodium chlorides is more convenient and better. The loose tissue of the thigh or of the abdomen is recommended as the place for injection. The rate of infusion should not exceed one ounce per minute for a patient weighing one hundred and twenty-five pounds.

PLACENTA PREVIA.*

By SAMUEL K. SMITH, M. D., PORT HURON, MICHIGAN.

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PLACENTA PREVIA has occurred six times in the practice of the writer during a period of fifteen months, and since when to interfere seems to be a vital question, especially in cases wherein hemorrhage occurs early in pregnancy, I have chosen this subject for consideration today in the hope that an interchange of thought may enhance our obstetric experience.

Over one hundred years ago RIGBY described placenta previa as the attachment of the placenta to that part of the womb which always dilates as labor advances, and the hemorrhage accompanying this condition was regarded as unavoidable by this authority.

Placenta previa varies as to frequency. WINCKEL reported 6324 labors occurring between 1873 and 1878, with seven cases, or one to nine hundred three. In a second series, from 1879 to 1887, he reported 8570 labors with thirty cases, or one to two hundred eighty-three labors, over three times as many as the first series. LUCK reported 1550 labors without a case. LORMER reported 6862 labors with one hundred thirty-six cases, or one in fifty. HIRST estimates that it occurs once in twelve hundred labors. PLAYFAIR and PARTRIDGE estimate that it occurs once in five hundred seventy labors.

Causes.—Women who have large, relaxed uteri are more subject to it, and so it is seldom seen in primiparæ. Endometritis or myomata of the uterus or cancer may predispose to it. An abnormally low-situated tube may account for it. When the placenta is so situated that its center lies over the internal os, it is called placenta lateralis.

The chief *symptom*, hemorrhage, is supposed to be due to the separation of the growing lower segment of the uterus from the placenta. It does not usually occur until the latter two or three months of pregnancy, and may not take place until the commencement of labor. However, hemorrhage may occur as early as the second month, as happened in a case which I treated, and there is no doubt that many cases are undiscovered owing to termination in early abortion. The first hemorrhage is usually profuse, and may be alarming. Usually there is no exciting cause, the hemorrhage occurring without warning, without pain, and without rupture of the membranes. If at the time of labor, the hemorrhage is greatest after pain, inertia uteri is very apt to occur after the first stage of labor, and the hemorrhage may be most severe. When one hemorrhage has taken place, other attacks follow, and with increasing frequency until pregnancy is at an end.

Diagnosis.—The sudden occurrence of profuse hemorrhage without apparently sufficient cause, perhaps during sleep, and without pain, should always excite a strong suspicion of placenta previa. On examination, the cervix is found enlarged, caused by the afflux of blood to it, and is usually soft and dilatable. The vaginal vault has a boggy feel, and the blood-vessels are large and pulsating. If the placenta is central, the child cannot be felt per vaginam. And if it is lateral, the membrane can be felt on the opposite side. After labor is over there is great danger of inertia and postpartem hemorrhage, and also of septic infection.

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*Read before the NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN at its Port Huron meeting.

Prognosis.—When near term, about thirty or forty per cent. end fatally for mother and over fifty per cent. for child. Although the statistics of a few reporters show much better results for the mother, ninety per cent. of the children are lost.

Treatment.—A woman with placenta previa is not safe until pregnancy is ended. There is always danger of a fatal hemorrhage. Every hemorrhage lowers the vitality, and if the woman does not bleed to death her susceptibility to septic infection is great, and death often occurs because of a lack of vitality with which to withstand this latter trouble. The prospects of saving the child in the seventh and eighth months are practically hopeless, and termination of labor at this time would very seldom, I believe, end fatally for the mother.

When the first hemorrhage occurs near full term, it is not best to wait for labor pains, but in every case to dilate, and if the edge of the placenta cannot readily be discovered persist in seeking until a foot is found. Then the case is under control and haste is unnecessary, for while the child is in this position the mother's life at least is safe.

I feel certain that had I not tried the expectant plan of treatment in a woman six months pregnant her life would have been saved. The case was as follows: When a little over six months pregnant the woman had a gush of blood from the vagina, while sitting perfectly quiet and unattended with any pain. There was not the characteristic feel of the placenta, but the pulsation was marked and the cervix was larger than normal at this period. On going to bed the flowing had ceased greatly and continued but slightly. On consultation it was deemed best not to interfere. The pulse was 72, the patient was in good spirits, and there was not the slightest occasion for alarm. Two weeks afterward, another hemorrhage occurred, which a tampon readily controlled. Three weeks later flowing began and continued for a week, but the patient kept the knowledge of this fact from both her husband and me, until at last an exceedingly profuse hemorrhage occurred, which made a large pool on the floor, when I was called and immediately summoned DOCTOR CLANCY. The condition of the woman was precarious. We tried to dilate and deliver but the os was rigid, and her condition at the same time so weak that we were obliged to delay and pack. The objection to delay was now greater, owing to the presence of fever. The use of an iodoform gauze tampon stimulated the uterus to contraction, and pregnancy was terminated on the following day. There was a great loss of blood, and I never witnessed a patient so readily succumb to indisposition as this woman did to the fever, although it did not seem very severe. The woman had borne several children, the last pregnancy yielding twins.

Another case was that of a mother of one child. The woman was about six months pregnant when the first hemorrhage occurred. Pain was not a symptom, and there seemed to be no reason for the flowing. After the patient had remained in bed for a week and the flowing still continued, I called DOCTOR WILLSON to consider the advisability of terminating pregnancy, but he advised further delay and the use of the glycerol of tannin tampons. The flowing continued for about ten days longer when abortion took place, and the woman recovered without further mishap. I believe an early interference would have resulted more favorably by preventing the three weeks of flowing.

The third case was that of a mother of five children. When about two months pregnant, the woman was threatened with an abortion which Doctor Clancy succeeded in preventing. When about seven and a half months pregnant, she was taken while in bed with a very severe hemorrhage. On making a hurried examination, nothing could be distinguished but a boggy feel in the vaginal vault. With Doctor Clancy's assistance I readily dilated and pulled down a foot through the centrally-located placenta. The recovery was uneventful.

The fourth case was that of a woman whose pregnancy had been without incident until the last month, when she had a severe attack of la grippe complicated with that annoying spasmodic cough so like whooping-cough. About two weeks after expected time, and right in the midst of la grippe, while the temperature was 102°, a severe hemorrhage occurred. On examination, the placenta could be felt on the left side and the head on the right. With Doctor Platt's assistance I easily dilated and reaching through the placenta grasped a foot. I delivered a living child, and after infusing about a gallon of normal salt solution the mother rallied. The patient's condition was favorable until the fifth day, about which time a severe postpartem hemorrhage followed an attack of coughing. When I arrived at the house a few minutes afterward. the uterus was firmly contracted, the hemorrhage had ceased, and the pulse had moderated. The woman expired without a moment's warning, her demise probably having been due to an air embolus.

Of the two remaining cases one accident occurred the seventh month and the other in the eighth. They were uneventful.

ASTHENOPIA—ACCOMMODATIVE AND MUSCULAR.*

BY CALVIN R. ELWOOD, M. D., MENOMINEE, MICHIGAN.

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It is my privilege to present for your consideration a condition in the relief of which much of the time of the oculist is employed. The difficulties involved in contracting a subject large enough for a symposium to the limits of a short essay are many. It is my purpose, therefore, to review briefly the physiology of convergence and accommodation, the pathology of their numerous anomalies, and the treatment indicated, not exhaustively but with the desire to bring before you such points as are of especial interest to the general practician.

The eye has been compared to the photographer's camera and although improperly so on account of its extremely delicate structure, the simile is of value for purposes of demonstration. The sclera and cornea, which are comparatively firm, furnish the protection and support of the lens, the other refractive media, and that most wonderful and complicated portion of the central nervous system the retina, which is capable of receiving and recording distinctly visual impressions at the rate of nearly sixty per second. The photographer increases the effect of his lens to obtain the images of near objects by increasing the distance between lens and plate, but the eye is provided with an extremely delicate reflex mechanism which acts with such rapidity and precision, that we are seldom conscious of an effort to fix our vision, unless we look suddenly from a distant object to one very near. The ciliary muscle encircles the lens, is attached to its capsule through the suspensory ligament and inserted into the choroid, its punctum fixum being the unyielding corneo-scleral junction.

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* Read before the Upper Peninsula Medical Society at its Menominee meeting.

The act of focusing consists in contraction of the muscle, thereby drawing the choroid slightly forward and releasing the tension on the lens, when it, by virtue of its own elasticity, becomes sufficiently convex to produce a perfect image upon the retina. In the normal eye the ciliary muscle should be practically at rest when the patient is looking at a distance of twenty feet or more and active only for nearer vision.

Unfortunately, physical like moral perfection is rare, the optically imperfect eye is frequently met with, and in every case of this character the function of accommodation is more or less modified. When one considers the extremely delicate reflex mechanism which enables the eye to focus on a point distant and then near so quickly and perfectly that the individual is unconscious of the effort, and that this function is nearly as active during the waking hours as respiration, should it be a cause of wonderment that many of the gross defects are associated with the headache, the eyeache, and the general nervous irritability which come under the comprehensive head of asthenopia?

Refractive error is either hyperopic or myopic, depending upon whether the focus is too long or too short for the length of the eye, and in the majority of cases the condition is complicated by astigmatism, due to irregularity in the curvature of the cornea. The hyperopic eye is too short for its focus with the ciliary muscles at rest, and the desire to obtain distinct vision causes a constant muscular effort. The hyperope presents a history of some form of headache or other nervous disturbance with or without evidence of ocular irritation, the symptoms being as varied as the disposition of individuals. The discomfort may be continuous and aggravated by near work, or present only during or after close application.

Inasmuch as vision is usually normal—often very acute—the sufferer frequently looks elsewhere for the cause of his trouble and is unwilling to consider it due to imperfect eyes. I have in mind a patient who was referred to me by a local physician for opinion concerning the cause of certain symptoms somewhat suggestive of mastoid disease, although no diagnostic signs were present. After careful examination, I was convinced that the condition was purely reflex and, as further suggestive history was obtained, the patient was carefully refracted under homatropin. The correction of three diopters of hyperopia gave the patient such relief that, when congratulating her recently on the birth of her son, she said she could not have been so blessed had it not been for the comfort which her glasses had given her. While admitting that this is giving unmerited credit to a pair of glasses, it is not surprising that the removal of such a strain should give great relief to a nervous woman. The amonnt of strain on the ciliary muscles of an emmetropic eye when focused at thirteen inches, is three diopters. The person with such an eye as mentioned above could live the life of an illiterate scrub-woman and still strain the eyes more than a diligent student with normal eyes who uses only three diopters of accommodation when reading at a distance of thirteen inches. The other person uses that much whenever seeing clearly at any distance, and the three diopters more when sewing or engaged in other near work.

The same thing is true, although in a greater degree, when the hyperopia is complicated with astigmatism, as it was in the ninety per cent. of 2628 cases reported by Doctor Risley. This proportion is greatly in excess of that given by most observers, but coming from such an authority is almost beyond question, and would suggest that we are too apt to overlook small degrees of astigmatism, the correction of which is of vital importance for reasons that will be given in the consideration of myopia. Astigmatism of small degree will often cause greater disturbance than a much larger amount of hyperopia, for the reason that it is due to a lack of symmetry in the curvature of the cornea and the muscular effort to correct it is therefore interrupted.

For example, a young lady consulted me, who stated that she could not travel without being car-sick, and could not sew or read for any length of time without a severe headache followed. Under a mydriatic three-fourths diopter of hyperopic astigmatism was found, the correction of which has enabled her to travel with comfort and use her eyes as she wished. When she first received her glasses she wrote me a letter that was anything but encouraging, stating that she could see far better without the glasses and that they increased her discomfort; but when they were broken two months later, they were sent for repairs by special delivery with a request for their immediate return.

In this connection I wish to call the attention of the society to a matter which can do great injustice to an oculist and which is often very difficult for him to regulate. I refer to the varied adaptability of hyperopic and astigmatic patients for their correcting glasses. Subsequent results proved that the patient mentioned above had her proper correction, but it took nearly a month before the ciliary muscles would relax from the spasmodic contraction produced by years of strain, and enable her to use her glasses with comfort. This is also true of hyperopia perhaps in a greater degree, as the focusing mechanism is more directly employed in its correction.

Sometime ago a young man came to my office with the history of periodic sick-headaches, so severe that he had been obliged to lose much time from school. Refraction under homatropin gave normal vision with four diopters of hyperopia. As the patient was of nervous temperament I gave only one-fourth of his correction at first. Two days later he came to the office with his mother after having suffered very severely from headache and pain in the eyes. I explained the trouble as being due to unusual difficulty in becoming accustomed to the glasses and again reduced the strength of the lenses making them one-sixteenth the full correction. He returned frequently for change in lenses and in one month was wearing without complaint the lenses which at first caused such great disturbance. From then on the increase was greater each change but at longer intervals, until he is now wearing nearly the full correction with comfort. Although this case is an extreme example, it serves as a type of a class of cases, in the early management of which the oculist is very dependent upon the patient's confidence, and greatly appreciates any good word from the family physician that will increase it.

This difficulty of many patients to accept the glasses they need, has led to the adoption of varied methods in the treatment of hyperopia. Should a physician prescribe approximately the full strength needed, the patient might tolerate the blurred image and general discomfort for a week or so, then go to a refracting optician who, with an expression of horror at such a bungle, would give one-half or one-third the strength, and the patient would be perfectly satisfied until the weak lenses received proved insufficient help. Should the physician, on the contrary, give only one-half or one-third the full correction as a permanent glass, he would be giving the patient a fraction of the benefit possible and after a time the old symptoms would return although modified.

It has been my custom in prescribing glasses for hyperopes or compound hyperopic astigmatics, to first give a weaker lens with the understanding that the glasses should be returned in from two to six weeks for change, and that after one or two changes the glasses will be what would be needed until presbyopia made further assistance necessary. Inasmuch as the mydriatic is of special value in the diagnosis of the above conditions, I wish to emphasize the necessity for its employment in practically all cases giving symptoms of severe asthenopia provided the patient is under forty years of age.

The subject of mydriatics is sufficient in itself to furnish material for a paper, and I shall therefore only call your attention to certain principles accepted by the majority of oculists. Asthenopia is usually the result of excessive strain upon the ciliary muscles, but as they are involuntary we feel the effect of their overwork only through the various reflexes. It is not an uncommon occurrence for me to remove concave lenses, fitted without a mydriatic, from a patient suffering from hyperopic astigmatism, either simple or compound. The contraction of the overworked muscles often becomes spasmodic, thereby greatly lessening the hyperopia or even causing it to simulate myopia. For these reasons it is certainly very difficult to accurately measure this strain without putting the part absolutely at rest, by some drug that will inhibit its activity. It is my custom to employ homatropin as the effect is obtained in one hour and usually disappears in less than twenty-four. Atropin is the old reliable drug and is preferred in complicated cases, but it requires longer time. I am not familiar with a reported case and know of none where the use of homatropin in refraction has been followed by untoward symptoms. In the glaucomatous eye it might precipitate an attack and is contraindicated. The intraocular tension should therefore be taken in persons past middle life before it is employed. I believe that it is quite as scientific to examine the thorax through the patient's clothing, as to diagnose an error of refraction in an asthenopic patient without a mydriatic. What exposure of the chest is in one case, complete mydriasis is in the other.

The result of repeated examinations of students by different authorities proves that the refraction of the eye increases as the grades advance. DOCTOR W. F. NORRIS has published the result of eleven carefully observed cases in which compound hyperopic astigmatism became compound myopic after a number of years; and as clinical experience tends to prove the excellent teaching of DONDERS, "that a myopic eye is a diseased eye," the importance of correcting compound hyperopic astigmatism is thereby increased. The myope is not so great a sufferer from asthenopia unless the error be high or complicated by astigmatism, as ciliary contraction would increase the myopia. In myopic astigmatism the conditions and indications for its correction are the same as for hyperopic.

Among the most obstinate forms of refractive asthenopia are those due to very great difference in the refraction of the respective eyes. In these cases the difficulties presented are many and often serious, and so varied that every case is a rule unto itself. That form of eye strain to which much study is given at present, with most varied opinions, is that due to marked imbalance of the extrensic ocular muscles. This condition if uncorrected by muscular effort would cause diplopia, and as the human species is averse to seeing double all the time, the strain and resulting discomfort in these cases is pronounced. An insufficiency of the internal or external recti of about one degree is usually unimportant, but the greater defects cause serious trouble; treatment is tedious and results sometimes unsatisfactory. While not in sympathy with the enthusiast who does a tenotomy of the opposing muscle on slight provocation, I have had two cases in which the operation was of undoubted value. The vast majority of these patients may be relieved by careful correction of the refractive error, suitable ocular gymnastics to exercise the weak muscles, and such constitutional treatment as may be indicated, as sufferers from this form of eye strain are usually of the hysterical or neurasthenic type. The employment of prisms for the relief of muscular insufficiency is not as popular as formerly, although useful in selected cases.

It is unnecessary in this meeting to state, that the symptoms above enumerated may be aggravated by lithemia or digestive disturbances, and that no obstinate case is thoroughly studied without an examination of the urine and alimentary tract, and such further investigation as may be indicated.

A most complete examination of all the pupils in the Philadelphia public schools was recently made by a competent corps of specialists, including several of the most prominent in that medical center, with the result that less than twelve per cent. were found with emmetropic eyes, thirty-one per cent. were hyperopic, forty-three per cent. hyperopic astigmatism, two and a half per cent. myopic, eleven per cent. myopic astigmatism and one per cent. mixed astigmatism. This does not signify by any means that eighty-eight per cent. of these school children should wear glasses. The personal equation is as prominent here as elsewhere in medicine. Whereas a strong, vigorous individual could stand the eye strain resulting from three diopters of hyperopia without discomfort, a much smaller amount would produce varied reflex phenomena in one with a susceptible nervous system. Although this branch of medicine has been shamefully abused by unprincipled and unskilled spectacle venders, our case books are replete with examples which show the relief given by properly fitted glasses. It is strictly rational therapeutics, whereby the cause is effectually removed, a new world opened to myopic and some astigmatic patients, and by which the sufferers from hyperopic and astigmatic headaches find great relief.

HYPERACIDITY OF THE STOMACH CONTENTS.

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This condition was known to the older physicians as acid dyspepsia, to the laity as sour stomach. Its presence was determined by the symptoms of acid eructations, heartburn, sour taste in the mouth and by the fact that these symptoms were relieved by the administration of alkalies. To Reichmann is due the credit of having been the first to investigate this condition by means of modern methods. When we remember that it was not until 1871 that Leube[1] recommended the stomach pump for diagnostic purposes, that it was not until four years later, in 1875, that Ewald[3] demonstrated that soft rubber tubes could be passed into the stomach without difficulty, and that color reactions for hydrochloric acid were described first in 1874 by two Frenchmen, Laborde and Dusart,* it does not appear surprising that the work done previous to the time of Reichmann is lacking in scientific value. In the nature of the case it could not have given other than inaccurate results based, as it was, largely on speculation.

When the acidity of the stomach contents one hour after an Ewald test breakfast is between sixty and seventy a condition of hyperacidity is said to exist. This hyperacidity is due to an increase above the normal of the amount of hydrochloric acid secreted.[4] At times from the presence of fermentation acids, lactic, butyric and acetic, a hyperacidity may occur.

In considering this subject, the fact must not be lost sight of that the normal acidity of the stomach contents (between fifty and sixty) is subject to considerable variation in the same individual. Ewald[5] observed a daily difference of from twenty to twenty-seven degrees of acidity. A similar variation may occur when the secretion of hydrochloric acid is altered pathologically. Because of these variations it is often impossible to base an opinion of the working of the stomach upon a single analysis. Having observed this condition in a number of patients admitted to the medical wards of the University Hospital, I instituted the plan of giving each patient a series of at least three stomach analyses on consecutive days by way of control before any treatment is prescribed. During these three days the patients are kept as nearly as possible under the same conditions. It should be borne in mind that the normal limit is an average normal and that there are many whose normal may be as high as seventy or higher; at least we are driven to this conclusion in the absence of stomach symptoms or signs of impaired health in such individuals.

An increase above the normal acidity may occur with a comparatively low value of hydrochloric acid and a high per cent. of acid salts. This is true especially when the larger test meals, such as those of Leube and Riegel, are employed, in which case considerable quantities of acid salts are taken in and their presence may lead to error if the actual amount of hydrochloric acid is not known.[6]

SIGNIFICANCE OF THE TERMS HYPERACIDITY AND HYPERCHLORHYDRIA.

There appears to be some confusion concerning the terms hyperacidity and hyperchlorhydria. The term hyperacidity can be applied to stomach states showing excessive acidity whether due to total hydrochloric acid, free hydrochloric acid, acid salts, or to the fermentation acids. The term hyperchlorhydria, on the other hand, is more restricted in its application and was introduced to designate a more or less definite group of symptoms brought about only by an excessive amount (above two-tenths per cent. or fifty-five) of free hydrochloric acid.

Hyperacidity and hyperchlorhydria must not be confounded with hypersecretion, the Magensaftfluss of Reichmann, a term which refers to the excessive secretion of *gastric juice*, whether periodically or continuously. According to STRUMPEL[7] hypersecretion almost always accompanies hyperchlorhydria and not the opposite. On the other hand in one hundred twenty-one cases of hypersecretion reported by JAWORSKI[8] one hundred fifteen showed hyperchlorhydria. MARTIUS in eight cases found from four-tenths per cent. to five-tenths per cent. of free hydrochloric acid thirteen hours after taking food.

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* Priority for the discovery of color reactions for hydrochloric acid has been given to von den Velden, who, however, in 1879 acknowledged the work of Laborde and Dusart. ([3]*Deutsch Archiv. für Klin. Med.*, Band XXIII, seite 374.) Analin sulphate and lead peroxide were first used and later in 1877 methyl violet.

The work of HAYEM, COHNHIEM, EINHORN, BOAS, HEMMETER and others has somewhat modified the view formerly held that hyperacidity, aside from the increased acidity associated with peptic ulcer, was due entirely to a functional disturbance of the nerves of the stomach. We now recognize two distinct classes of hyperacidity: that due to a functional disturbance of the nerves of the stomach; and that dependent upon definite anatomical changes in the gastric mucosa. It is as yet a mooted question as to which of these forms predominates. HEMMETER[9] goes so far as to assert that over half of the cases of hyperacidity are due to the latter.

EVIDENCE IN FAVOR OF THE FUNCTIONAL NEUROSIS THEORY.

There seems to be sufficient evidence to warrant the belief that hyperacidity is frequently due to so-called nervous influences. It has been known for some time that there is a direct relation between the inervation of the stomach and its secretion. (*a*) If the vagus nerves are severed, the secretion of the stomach is arrested, while if the vagus nerves are stimulated a flow of gastric juice is excited; (*b*) if the esophagus is occluded so that no food can enter the stomach, the mere entrance of food into the mouth or the smell of food calls forth a secretion of gastric juice. This condition, however, does not exist if the vagi have been severed.

There has been much discussion over the part played by the sympathetic nervous system in the secretion of the gastric juice. ALBUTT disposes of this point by saying "it is better to wait till our knowledge comes than to prate about vasomotor and sympathetic nerves to cloak our ignorance." In 1896 KYTMANOW'S[39] and in 1897 HUBER'S[40] work was published, so that it is now well known that the secretion of all glands is under the immediate control of the secretory sympathetic nerve fibers, the neuraxes of the sympathetic nerve cells. The secretion of the gastric glands is not an exception. The cerebrospinal nerve fibers, having a secretory action, do not terminate on the gland cells, as is generally supposed, but about sympathetic nerve cells which they stimulate, these in turn conveying the impulses to the gland cells.

It has long been known that hyperacidity is more common among individuals predisposed to nervous influences than among those whose habits of life are more equable. JAWORSKI[10] noticed it among the Jews of Galicia, a people who are especially predisposed to nervous disturbances. JOLLY found an increased secretion of gastric juice in hysteria, and VON NOORDEN[11] writes of the occurrence of hyperacidity in melancholia. VON NOORDEN'S work suggested to me the desirability of making a series of observations as to the condition of the stomach secretions in the various forms of insanity. This was made possible through the kindness of DOCTOR W. M. EDWARDS, superintendent of the Michigan Asylum for the Insane at Kalamazoo. With the assistance of DOCTOR FLORENCE E. ALLEN, pathologist to that institution, I began the work a little over a year ago.

The time required for doing this work being considerable and the number of cases examined thus far being comparatively few, we are not yet ready to make any definite statements as to the condition of the secretion of the stomach in these cases. Our observations extend only over a series of twenty-eight cases, a number entirely too small to furnish an adequate basis for definite conclusions. They are, however, not without interest.

With two exceptions the cases were selected regardless of any known stomach complaint. These exceptions were numbers 18 and 24 (see Table I). The amount of bread has been uniform, between sixty and eighty grammes, except in numbers 1, 2, 3, 4, 13, 14, 15, 16, 17, 18 and 19, wherein the amount was one hundred grammes. The cases are distributed as follows: Melancholia 13, dementia 10, mania 3, hystero-epilepsy 1, hypochondria 1. The results of the examination can be better seen by reference to the following table:

TABLE I.—REPORT OF THE FIRST SERIES OF STOMACH ANALYSES OF THE INSANE, MADE AT THE MICHIGAN ASYLUM FOR THE INSANE, KALAMAZOO.

Number.	DIAGNOSIS.	Time.	Amount.	Total acidity.	Free HCl.	Combined HCl.	Total HCl.	Acid salts.	Lactic acid.	Pepsin.	Pepsinogen.	Tissue bits.
1	Melancholia, acute........	1 hr	30	104	70	04	74	30	o	x	x	o
2	Melancholia, acute.......	1 hr	24	111	36	42	78	33	o	x	x	o
3	Melancholia, acute.	1 hr	150	84	40	34	74	10	o	x	x	o
4	Melancholia, acute.......	1 hr	75	82	48	22	70	12	o	x	x	o
5	Melancholia, acute.......	1 hr	100	56	06	32	38	18	x	x	x	o
6	Melancholia, acute.......	1 hr	95	66	24	28	52	14	o	x	x	o
7	Melancholia, acute.......	1 hr	75	14	00	04	04	10	o	o	o	o
8	Melancholia, acute.......	1¼ hrs	25	90	20	50	70	20	o	x	x	o
9	Melancholia, acute.......	1 hr	15	90	x	....	...	...	...	...	...	o
10	Melancholia, chronic.....	1 hr	200	44	12	18	30	14	o	x	x	o
11	Melancholia, chronic.....	1 hr	80	84	42	22	64	20	o	x	o	o
12	Melancholia, chronic.....	1 hr	40	90	20	30	50	40	o	x	x	o
13	Melancholia, recurrent....	1 hr	50	72	32	02	34	38	o	x	x	o
14	Dementia................	1 hr	50	86	54	24	78	08	o	x	x	o
15	Dementia................	1 hr	200	70	20	30	50	20	o	x	x	o
16	Dementia................	1 hr	55	54	00	45	45	09	o	o	x	o
17	Dementia................	1 hr	65	88	07	24	31	57	o	x	x	o
18	Dementia................	1¼ hrs	68	04	00	01	01	03	o	o	o	o
19	Dementia................	1 hr	130	66	20	30	50	16	o	x	x	o
20	Dementia................	1 hr	35	18	00	08	08	10	x	o	x	o
21	Dementia................	1 hr	145	80	48	24	72	08	o	x	x	o
22	Dementia................	1 hr	75	34	00	28	28	06	o	o	o	o
23	Dementia................	1 hr	100	70	26	20	46	24	o	o	x	o
24	Mania, chronic...........	1 hr	350	66	28	20	48	18	o	x	x	o
25	Mania, prim. dementia....	1 hr	50	40	10	14	24	76	o	o	x	o
26	Mania, hystero...........	1¼ hrs	25	80	60	10	70	10	o	x	x	o
27	Hystero-epilepsy.........	1 hr	65	96	38	46	84	12	o	x	x	o
28	Hysteria and hypochondria	1 hr	80	90	40	24	64	30	o	x	x	o

It will be seen that of the twenty-eight cases, in two cases only, Numbers 1 and 26, was hyperchlorhydria present. But according to EWALD's definition of hyperacidity (when total acid is between sixty and seventy) that condition was present in seventeen cases, that is in sixty and one-half per cent. It will also be noticed that the acid salts in a number of cases were relatively high. Pepsin was invariably present in the cases showing hyperacidity and hyperchlorhydria, and the digestion of egg albumen was accomplished in the majority of these cases within a comparatively short time. In two cases, Numbers 5 and 20, associated with a low, free hydrochloric acid value, lactic acid was present in small amount. A careful watch for tissue bits gave negative results in all cases.

Of the thirteen cases of melancholia nine showed hyperacidity (hypertotal acidity), one hyperchlorhydria Of the ten cases of dementia, hyperacidity was present in five, while none showed hyperchlorhydria. The cases of hysteromania, hysteroepilepsy and hysteria showed a high acidity and a high total hydrochloric acid value, with hyperchlorhydria in the former.

The examinations so far have been made entirely upon females, and only the first examination of each case is given. We hope in time to report a larger number of cases including males and females, upon which we shall be able to base more definite conclusions. The per cent. of total acid on the whole is distinctly high in the cases reported.

Hyperacidity has been attributed to certain reflex disturbances. It is not uncommonly associated with gall-stone colic and renal colic, which will be considered later.

EVIDENCE IN FAVOR OF THE ANATOMICAL THEORY.

Hayem was the first to describe hyperacidity due to anatomical changes in the gastric mucosa. To this condition he gave the name gastrite parenchymateuse chloro organique, of which he makes two divisions: that class of cases in which the stomach distress comes on in the first period of digestion; that class of cases in which the distress comes on in the later period of digestion, that is, one-half to two hours after taking food. He styles this a hyperpepsia with hyperacidity associated with degeneration of the principal central or chief cells and a proliferation of the parietal, border or oxyntic cells. **Cohnheim**, **Einhorn** and **Hemmeter** in their work arrive at the same conclusion. In eighteen cases of hyperacidity reported by **Hemmeter**,[12] no anatomical changes were found in four, atrophy was present in two, glandular proliferation in six, and proliferation of the parietal or oxyntic cells in six.

This condition is recognized clinically by the finding of bits of tissue in the stomach washings. Notwithstanding a somewhat careful watching we did not find any tissue bits in our series of cases showing hyperchlorhydria.

Boas[13] is also of the opinion that cases of gastric diseases associated with hyperacidity are instances of a true gastritis rather than mere functional disturbances. He found that these cases were due, as a rule, to abuse of alcohol, tobacco and purgatives.

THE ASSOCIATION OF HYPERACIDITY WITH OTHER DISEASES.

Peptic Ulcer.—**Riegel**[14] was the first to study systematically the relation of the acidity of the gastric juice to peptic ulcer. In three hundred eighty-two analyses made of forty-two cases of peptic ulcer he invariably found hyperacidity at this time. He considered it a constant phenomenon of the disease. But the work of **Gerhardt**, **Cohn**, **von Mering**, **Ritter**, **Hirsch**, **Rosenheim** and others, as well as my own observations, leads me to the conclusion that there are many exceptions to this rule, and that peptic ulcer may occur regardless of an associated over-secretion of hydrochloric acid. Rochemont[15] reports a case of ulcer of the stomach with lactic acid present and only a trace of hydrochloric acid. Twenty per cent. of the thirty cases reported by Stoll[16] failed to show any free hydrochloric acid.

Carcinoma.—Knowledge concerning HCl in carcinoma of the stomach does not appear to have been thoroughly disseminated; for we not infrequently hear of cases that have been improperly diagnosed because of the prevailing idea that HCl is always very much diminished or absent. This is true in the majority of cases, but it is now well known that hyperchlorhydria frequently accompanies carcinoma developing on an old ulcer—the so-called ulcus carcinomatosus. Rosenheim[41] found that five or six per cent. of peptic ulcers become carcinomatous at their margins, and in these cases a high degree of hyperchlorhydria is present.

Chlorosis.—Long since Hayem,[17] Pick,[18] Buzelygan and Glucinsky,[19] showed by direct chemical examination of the stomach contents that in chlorosis and "anemia" a diminished gastric secretion was characteristic. On the other hand the somewhat more recent work of Oswald,[20] Mayet,[21] Hemmeter,[22] and others, shows that an augmented secretion is the rule in chlorosis. Oswald asserts that hyperchlorhydria is present in ninety-five per cent. of the cases of chlorosis.

Rheumatism, gout, and some forms of Eczema.—Not infrequently we meet with cases of muscular rheumatism associated with hyperchlorhydria. Whether this is a coincidence or whether there is a relation between these two conditions is as yet an unsettled question. Chambers of Toronto recently reported hypochlorhydria associated with gout, and, also in six cases of eczema.

THE EFFECT OF FOOD AND EXERCISE ON THE SECRETION OF HYDROCHLORIC ACID.

TABLE II.

AUTHORITY.	Meal.	Free HCl. appeared after	Meal.	Free HCl. appeared after
Ewald and Boas........	60 grammes bread, glass of tea.	30 minutes.	120 grammes meat.	1½ to 2 hours.
Moritz.........	240 grammes mashed potato	1 to 2 hours.	240 grammes meat.	4 hours.
Schule.........	400 grammes mashed potato	1½ to 1¾ hours	250 grammes meat.	1 to 2 hours.
Bachmann....	Vegetable dinner.	½ hour earlier than with animal meal.	Animal dinner.	½ hour later than with vegetable meal.

Most writers agree that the total hydrochloric acid value is higher when an animal diet is used than when the diet consists almost exclusively of carbohydrate foods; also that a meat diet apart from its greater combining power causes a stimulation or irritation of the gastric mucous membrane, and thus produces a greater flow of hydrochloric acid. Sorensen and Metzger,[29] however, dissent from the opinion that a meat diet is irritating.

The appearance of the characteristic symptoms of hyperchlorhydria depend upon the length of time it takes for free hydrochloric acid to be secreted in excess. This period is subject to considerable variation as it depends upon the quality and quantity of the material ingested. Those substances in the food for which hydrocholoric acid has an affinity must be saturated before free hydrochloric acid appears. These substances are, first, the inorganic bases of the food as well as of the saliva, which, with the hydrochloric acid form stable salts, and being neutral do not figure in the total acidity; and secondly, the albuminoid bodies either in the form of the organic basis of the food, forming acid proteids or those present normally in the stomach as pepsenogen, chymosenogen epithelial cells, mucin, and those present as the result of some pathological process. After a meal rich in these bodies, free hydrochloric acid appears later than after a meal consisting of substances having a lower per cent. of acid-combining constituents. That this is the case has been shown by Moritz, Schule, Bachmann,[24] and others.

Strauss[25] and Brandt[26] show by a series of experiments on cases of hyperacidity that solutions of sugar delay the appearance of free hydrochloric acid. Within the past year I have had two cases of peptic ulcer with hyperchlorhydria, in both of which the patients sought relief from their pain by eating plentifully of confectionery.

There seems to be sufficient reason to believe that exercise has much to do with the secretion of the gastric juice. Salvoali found experimentally that fatiguing exercise diminished the secretion of hydrochloric acid, and varied very materially the rapidity of digestion. Surmont and Brunelle[31] have shown that there is an increase in the secretion of the gastric juice following exercise of an hour's duration, and conclude that the stomach requires rest after a meal in cases of gastric excitement or hypersecretion, and moderate exercise in cases of hyposecretion.

THE RELATION OF STARCH DIGESTION TO HYPERCHLORHYDRIA.

It was formerly thought that the action of saliva ceased as soon as it reached the stomach, but it has been shown by von den Velden[34] and it is easy to demonstrate that swallowed saliva normally continues to act in the stomach. Ptyalin acts best in a neutral or slightly alkaline medium and loses its inverting power in the presence of a one one-hundredth of one per cent. solution of hydrochloric acid. This action, however, is only temporarily stopped; it appears again upon neutralization, as has been shown by Boas, Robertson,[33] and others.

The period during which the amylotic action continues, therefore, depends entirely upon the length of time it takes for the appearance of free hydrochloric acid in the amount of one one-hundredth of one per cent. or more. Toward the end of digestion, after the free hydrochloric acid has been used, the ptyalin may again begin its inverting effect on any starch that may be present. If, however, the acidity of the gastric juice reaches three-tenths of one per cent. the action cannot again be so perfectly restored by neutralization with sodium bicarbonate as it was before. In hyperacidity, especially when associated with hypersecretion, starch digestion is greatly lowered or is entirely absent. However, the interesting experiments of Cannon[37] tend to show that starch digestion may go on in the most acid stomach. Cannon asserts that the theory of the mixing currents in the stomach as advanced by Beaumont and Brinton does not hold true, at least in his experiment, wherein he found that food taken from the periphery of the fundus of a cat's stomach was slightly acid, while that taken from a point two and one-half cubic centimeters into the fundus contents gave the original alkaline reaction. Specimens taken from the antral and middle regions from various depths were all strongly acid. Cannon concludes that the food does not become acid at a uniform rate in all parts of the stomach; that there is no movement of the fundus of the stomach; that it acts as a reservoir for the food in which the digestion of sugars and starch may take place.

FREQUENCY OF HYPERCHLORHYDRIA.

Of the ninety-one stomach cases received at Professor Dock's clinic during the last ten months, forty-one showed a total acidity above sixty-eight. Of these forty-one cases the *total acidity* was sixty-eight in one, between seventy and eighty in nineteen, between eighty and ninety in twelve, between ninety and one hundred in six, one hundred in two, and one hundred ten in one.

Free hydrochloric acid was between twenty-five and forty in three cases, between forty and fifty in fourteen cases, between fifty and fifty-five in nine cases, between fifty-five and seventy in thirteen cases, and as high as eighty in one case. In one of these there was not enough stomach fluid to make a quantitative test for free hydrochloric acid, the total acidity, however, in this case was ninety and Gunzberg's reagent gave a strong reaction.

It will be noticed that out of the forty-one cases of hyperacidity referable to all acids, only fourteen showed hyperchlorhydria, that is, in about thirty-one and one-half per cent. The total hydrochloric acid value (free hydrochloric acid + combined hydrochloric acid) was above sixty in thirty cases, that is, in about seventy three per cent.

We not infrequently meet with patients complaining of the symptoms of hyperchlorhydria whose free hydrochloric acid value is below fifty-five. We also find that these symptoms are relieved by the administration of sodium bicarbonate. This goes to illustrate that *it is impossible to draw a hard and fast line one side of which means normal chlorhydria, the other hyperchlorhydria.* It must be remembered that we cannot depend upon the chemical analysis alone for the diagnosis of stomach diseases. Its relation to diseases of the stomach cannot be said to be the same as is the relation of elastic tissue and tubercle bacilli to tuberculosis. The stomach analysis should be looked upon as an index of the state of the digestive processes just as the thermometer is an index of a febrile condition. *A single examination is of no more significance than a single observation of the thermometer.*

The chemical analysis in all the cases reported was made by Toepfer's method. Qualitative control tests for free acid, hydrochloric and lactic, were made with Congo red, Gunzberg's phleroglucin and vanellin test and Uffelmann's sesquichloride of iron and carbolic acid test.

The test breakfast used in the University Hospital consists of thirty-five grammes of granose* and three hundred cubic centimeters of water. The advantages of the granose meal are that it cannot be swallowed without being thoroughly mixed with saliva, and with it the amount of

*Granose is a staple food product.

acid salts is quite constant. Granose is made from the whole wheat grain by first soaking in water, salting, then rolling between rollers. The resulting flakes are collected on pans which are placed in a rotating oven where they remain until they are thoroughly crisp.

SYMPTOMATOLOGY.

Hyperchlorhydria is essentially not a disease. It gives rise, however, to a symptom group, which is more or less characteristic of functional neuroses as well as of true gastritis.

These patients complain mostly of distress in the stomach region, burning sensations, gnawing pains and at times intense cramping pains in the abdomen radiating to the back and simulating an attack of severe gastralgia. Belching of variable amounts of gas, having a burning acid taste, and at times eructations of sour fluid into the mouth and heartburn may occur. These symptoms are frequently relieved by drinking a few glasses of water and appear as a rule from a half to three hours after eating, depending upon the length of time it takes for the food to be saturated and for free hydrochloric acid to be liberated in excess. The former corresponds to the d'emblée, the latter to the tardive form of Hayem. These symptoms, as has been shown, occur earlier after carbohydrated food, later after albuminous food. Nausea and vomiting of acid material not infrequently occur. Belching and vomiting are as a rule followed by relief.

The appetite is usually good, often amounting to bulimia. The bowels are almost always constipated, though at times diarrhea may occur as the result of an increased peristalsis produced by the presence of the excess of acid thrown into the bowel. The evacuation of the bowels is often delayed and the digestion of carbohydrates and fats is arrested until the acid chyme is neutralized by the alkaline secretion in the bowel. In my experience the nutrition was generally unimpaired, although I have seen a number of cases in which not a little cachexia was present. These cases gave no history of ulcer nor was it possible to demonstrate carcinoma. The course of this condition is chronic, but it is subject to variations. It may appear periodically, at many times under the effect of psychical disturbances, as anger or excitation, or an unpurposeful manner of life, these symptoms appear more severe. At other times they completely vanish.[34] The motor power of the stomach is frequently increased although just the opposite of this condition may exist. Cramp of the pylorus may occur in hyperacidity, thus delaying the passage of the chyme into the intestines.

The Urine.—It has long been known that during the first three or four hours after eating, the acidity of the urine decreases. MATHIEU and TREHEUX[35] examined the urine of twelve cases of hyperchlorhydria, after eighty-four different meals. From their investigation, which consisted of over four hundred estimations of the comparative acidity of the stomach contents and the urine, they came to the conclusion that there is a relation between the acidity of the gastric juice and the urine; the greater the amount of acid in the stomach the greater the amount of acid secretion in the urine. The average quantity of fluid eliminated hourly according to these authors is less in hyperchlorhydria, and greater in hypochlorhydria. If there has been much vomiting or if lavage has been used frequently the urine may become alkaline.

SIMON[23] has shown that there is a relation between the elimination of indican in the urine and the amount of free hydrochloric acid present in the stomach, that "a subnormal amount of free hydrochloric acid will call forth an increased degree of intestinal putrification," and that "the conjugate sulphates form an index of the degree of intestinal putrification." Also that there is an increased formation of indol in case of subacidity, and that a normal acidity is never associated with increased indicanuria. "Cases of ulcer of the stomach apparently form an exception to this rule; an increased indicanuria being usually associated with hyperchlorhydria." "In other cases of hyperchlorhydria a subnormal or normal amount of indican is eliminated."

The Stomach Contents.—If we examine the stomach contents from three to five hours after the principal meal, it is characteristic to find a certain amount of material present which has a penetrating acid odor, a total acidity of one hundred or more, not uncommonly as high as 120, while free hydrochloric acid frequently reaches one hundred. So typical is this of hyperchlorhydria that it is not necessary to give a special test meal. Indeed in many cases this is imperative for I have repeatedly found the acidity of such cases within the normal limits after the ordinary Ewald test breakfast and in one case it was below. A test dinner should always be given.

Starch digestion is lowered or is entirely absent. Peptic digestion as a rule is increased, seldom lowered.

A specific gravity of 1010 in the filtrate after a test breakfast is said to be particularly frequent in hyperacidity, hypersecretion and fermentation, while a specific gravity of 1020 is characteristic of subacidity[25].

In the residue we rarely find much meat tissue; it is made up principally of breadstuffs, carbohydrates and fats. Bacteria are absent or few in number.* Small bits of mucosa may be found.

DIAGNOSIS.

It is at times difficult to distinguish between hyperacidity and peptic ulcer. In ulcer the pains are generally confined to the epigastrium or to the so-called dorsal pain region on a level with the tenth to the twelfth dorsal vertebrae; they appear earlier and are often aggravated after eating. Pain on pressure over the epigastrium is common in ulcer. The history of repeated attacks with profuse hemorrhage speaks for ulcer. Emaciation is more frequent in ulcer. In hyperchlorhydria, due to a functional neurosis, as a rule, the patient is robust and well nourished. This, however, is not always the case, for at times we meet with a high degree of cachexia in these individuals. The number of cases of hyperchlorhydria neurasthenia is a prominent factor and should not be overlooked.

From hypersecretion hyperacidity is differentiated by examination of the fasting stomach contents. It is best to make the examination in the morning, the stomach having been washed out the evening before. The presence of fluid to the amount of from eighty to one hundred cubic centimeters is considered proof that a condition of hypersecretion exists. As has been stated heretofore, in the majority of these cases hyperchlorhydria is present. Hypersecretion like hyperacidity should be considered a symptom dependent upon some other condition.

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* The filtrate from hyperacid stomach contents will keep indefinitely at room temperature.

In all cases showing hyperchlorhydria it is of importance to recognize whether the condition is a functional neurosis or whether it is due to anatomical changes in the gastric mucosa. In the presence of tissue bits this can be easily ascertained; on the other hand, in the absence of tissue bits we remain in uncertainty unless clinical symptoms strongly point to a so-called nervous basis.

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SOME REMARKS ON THE PATHOGENESIS AND TREATMENT OF GONORRHEAL ARTHRITIS.

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As long as serum therapy fails to produce and furnish to medical science a therapeutic agent that will arrest the destructive propensities of the gonococci, insidiously extended to the human organism, we must naturally confine ourselves to the remedial resources of the present materia medica, and apply them, if possible, to the best advantage in assisting nature to again bring about the normal condition.

To Neisser belongs the credit of announcing to the medical world the existence of this bacterial life. We are acquainted with their source of invasion and consequent production of inflammatory tissue changes and subsequent pathologic conditions of the mucous membranes of the male urethral tract, specified as gonorrheal urethritis, clap, et cetera, with its prostatic, epididymitic, lymphatic, glandular and other complications; of the abnormal structural changes of the female genital tract, as well as to the conjunctiva of the eye; and pursuant to the first incursions of the microorganism, the clinician is objectively and subjectively warned by the general condition of malaise of the patient, with its accompanying characteristic febrile manifestations, and the glandular enlargements, especially in the inguinal region, that the infectious foe has gained entrance into the general circulation and lymphatic system.

The invaders not satisfied, however, with the havoc and devastation so far committed, are taking advantage of a soil already made fertile and suitable for their destructive onward march, the human system, by previous contaminations, having been weakened and the blood placed in a state of toxemia; accomplished previously in various ways, namely: by a malassimilation in general; autointoxication through the alimentary canal in consequence of faulty oxidation of proteid elements, et cetera; pus absorption; or some other infection at the instance of earlier microbial intruders.

The battle is steadily and progressively being waged, its outcome favoring the bacteria and its toxic and ptomainic allies; and armies of human cells are gradually placed *hors de combat* in their hopeless struggle for supremacy, being forced to succumb, at least for a time, to their superior power.

The result of this hostile adversity is the production of anatomic and pathologic changes in the organism known in medical science and literature as gonorrheal arthritis, or rheumatism. Its pathogenesis assures us that almost any portion of the body is subject to the invasion and may become more or less involved or infected. Generally we notice the inflammatory intrusion confined to one joint, for example, the knee, ankle, or wrist, involving its muscles, ligaments, blood-vessels, nerves, bursal and synovial spaces; presenting eventually thecitis, synovitis, arthritic suppuration, and partial or complete ankylosis. The condition unfolds itself not infrequently, however, as polyarthritic, spreading farther and attacking simultaneously or oftentimes gradually other muscular structures, causing atrophy or contraction, and then the nervous system (cord, brain, optic nerve, both sciatic nerves, et cetera), and lastly, also, the heart in myocarditic, pericarditic and endocarditic manifestation. Under these conditions not infrequently the patient rapidly loses his powers of resistance, the action of secretory function, appetite, sleep, bodily weight, and oftentimes quickly collapses into a state terminating fatally.

Too much cannot be said and explained about these pathologic conditions and anatomic changes inaugurated by this treacherous malady, and vast amounts of instructive literature have already been contributed to medical science through the observation and research of noted clinicians and physicians. And still as long as these authors appear to be somewhat in the dark concerning this insidious disease, and only reluctantly assert or claim that their etiologic, pathologic and pathogenetic theories might be correct, it would be useless for me to dwell on the same very minutely; and therefore I will confine my remarks to the treatment of this disease, and incidentally refer to the cause and course as observed from the clinical records of over four hundred cases that were under my treatment during a period that extended over nearly ten years practice in Mount Clemens.

It is now understood and accepted as conclusive by at least the majority of the profession, that gonorrhea is not alone a local inflammatory manifestation, but is distinctively systemic in character, the glandular system in healthy organisms preventing general invasion, and that gonorrheal rheumatism, one of the sequelæ of this bacterial introduction into the system, in the opinion of many clinicians and scientists, can only be produced when the human body and the condition of its blood shows evidence of previous intoxications plus certain susceptibility or idiosyncrasy, lessening in consequence the power of resistance and thus weakening the nervous system, or vice versa, such as we are apt to find in cachectic, strumous, gouty, and rheumatic individuals, hastened and aggravated by a shock, trauma, climatic influences, et cetera. That is to say, gonorrheal virus finding itself in the general circulation of a healthy organism susceptible or not susceptible, possibly in a metastatic or some other way, cannot, in my opinion, be productive of a pathologic condition such as is seen in gonorrheal arthritis. The same theory might also be applied to the conditions now wrongfully termed inflammatory rheumatism, acute or chronic, articular, or muscular rheumatism. These conditions are also to be recognized and regarded as a general toxemia plus some infection, possibly gaining entrance through the tonsils or elsewhere, at present not positively known.

As an illustrative example of how the theory relative to gonorrheal arthritis can reasonably have a correct bearing, the following case may serve to give some thought for reflection:

A patient, who visited Mount Clemens some nine years ago, had contracted gonorrhea in 1882, which was accompanied with the characteristic chordee, epididymitis, and glandular swelling, from which, however, he recovered. His state of health and deportment at the time were excellent. In 1892 this person arrived at Mount Clemens for treatment of gonorrheal arthritis. Patient was leading for some years previous to his second gonorrheal infection, a somewhat dissipated life, the inflammation of the urethra resulting three weeks later in a gonorrheal rheumatism. From this attack he recovered. In 1895 and 1897, respectively, the patient contracted gonorrheal arthritis (microscopic evidence established the existence of the bacteria), but recovered both times without any marked disturbances, save a few small strictural conditions of the urethral tract. During these two attacks the patient's habits pertaining to excessive drinking, et cetera, were exemplary. No gonorrheal arthritis followed either of these two bacterial invasions. Last year this same person presented himself to me for the treatment of another attack of gonorrheal rheumatism. The history of his drinking proclivities and general faulty habits into which he had again fallen prior to his last infection convinced me of the correctness of the above stated theory.

In reference to the modus operandi for the treatment and possible eradication of these gonorrheal arthritic manifestations from the human system, which I have adopted and applied with apparent success in the majority of cases under my supervision, I have briefly this to say: The condition of each individual patient governs the course of treatment to be pursued, and no stereotyped prescription can be inaugurated or followed. While this treatment cannot in any sense be termed specific and considered successful in all cases, it has given satisfaction.

I simply make mention of this, because the treatment of this disease is generally considered very unsatisfactory, causing annoyance and anxiety to many practitioners as well as to the patients themselves. I do not claim that this mode of treatment should only be applicable and favorable with the assistance of the administration of our sulph-iodo-bromo-salines. I am simply guided by the experience and results gathered.

Other watering places of note possess effectual balneo-therapeutic agents, and may prove just as essential an aid in combatting this malady; and even the bath-tub at home filled with the necessary ingredients might be utilized, in my opinion, in case of e-junction with the proposed treatment. I do insist, however, that the physiologic and chemic make-up of our salines applied in the various forms of baths with the customary tub massage warrants the assertion of a pronounced speedy effect. While these baths must not be considered the paramount curative agent in the treatment of this special disease, they are at least to be regarded as a most powerful auxiliary resource in balneo-therapeutics.

The chief curative medication and the very foundation for the ultimate success in the treatment of this disease belongs to and consists in the application of well-known powerful inorganic germicides and mineral alteratives in different forms of administration, assisted by surgical, mechanical, balneo-therapeutic, hygienic, dietetic and other remedial measures at our command. I refer to mercury in its various chemical composition and mechanical application. If we take into consideration the fact that we today admit the gravity of gonococcic infection with its destructive sequelæ and nefarious complications, and regard it quite as dangerous to health and life, and likely to produce just as severe pathologic conditions as in syphilis, we must meet and combat such a foe with the strongest and most formidable therapeutic weapons at our command. Ordinarily recognized remedies and methods may be satisfactory and sufficient in the milder cases, but in the more complicated and graver ones, in which ankylosis of the joints, atrophy and contraction of muscles, inflammation of nerves, partial paralysis, endocarditis, and locomotor ataxia threaten the health and welfare of the patient, medicines of the salicylate group, coal-tar derivatives, opiates, iron, and strychnia are only to be looked upon as skirmishers.

My first experience in the treatment of gonorrheal rheumatism with such drugs always proved unsatisfactory in severe complications, no matter how successfully the urethral involvements were controlled. If in conjunction with all these auxiliaries, mercury was too timidly administered, because of much antagonism from the profession as well as the laity, the unsatisfactory results achieved in the treatment always would awaken the thought and impress upon my mind that cell destruction must necessarily still go on in consequence of insufficient mercurial application, the same not counteracting or overcoming the destructive propensities and force of these toxic factors.

The timidity and laxity in prescribing fully and courageously these so-called powerful alteratives seems to have been instilled into the minds of many, because of the indiscriminate and empirical application of the same in former decades and even centuries, and in some medical quarters the practice still prevails, causing some practicians and clinicians to condemn and abruptly stop their use, simply in consequence of insufficient knowledge of the physiologic action and effect, a faulty comprehension of the correct application of the drug and an occasional scare pertaining to a casual idyosyncrasy, productive of a salivation, stomatitis, or alleged "bone-ache" occurring in some patients. I have yet to see, with the possible exception of about two per cent. of the patients who have been under treatment, any deleterious effects produced in the patients suffering from gonorrheal arthritis by the correct and scientific use of mercurial preparations. No disturbances of the kidneys, bladder, stomach, mouth, or other organs were observed in the patients who underwent treatment years ago and who were subsequently examined. I do not wish to state that ill effects are not possible. Those patients, however, who were successfully treated with the addition of a course of methodical bathing escaped any of the unfortunate aftermath.

One patient under treatment some years ago for a severe gonorrheal rheumatism, involving the knee- and ankle-joints, which were partially ankylosed, thickened and swollen, having also atrophy and contractions of certain muscles, together with pain in both sciatic nerves, when it was explained to him that mercurial applications were extremely necessary with the addition of a course of methodical bathing, pleaded very earnestly and seriously that the use of mercury in former years for the cure of a syphilitic infection had caused the rheumatic conditions he was now suffering from, and that he was extremely averse to its further use, being under the impression that more of its administration would certainly stiffen him entirely. When informed that the baths would not permit any such condition, he very reluctantly consented to its application. Old indurations denoting the remnants of ulcerated syphilides made apparent the former existence of a luetic infection. Microscopic examination of the discharge from the urethra showed the presence of gonococci and convinced me of the fresh intrusion of bacteria.

The skepticism in this patient was soon buried beneath an avalanche of returning health, and within a few months all abnormal conditions of the joints, muscles, nerves, et cetera, gradually disappeared. The action of mercury seems to be mitigated in some way, when applied with the assistance of minerals baths. Very rarely do we meet with disastrous or annoying results from its application.

The treatment in general covers possibly a period of from four to twelve weeks. The result of a critical physical examination plus an analysis of the blood, urine, et cetera, governs the mode of procedure. Twelve to thirty-six mercurial inunctions of sixty grains each daily, or as many daily intramuscular injections of the bichlorid salts (varying from one-sixteenth to one-fourth grain) given at the option of the physician and consent of the patient, are recommended. Personally I prefer the inunction applied to the skin (as recommended by VON SIEGMUND) inasmuch as they do not subject the patient (who is already suffering from rheumatic and neuralgic pains) to more unnecessary torture from painful nodules, resulting from the hypodermatic method. Mineral baths are administered every day under the guidance of trained masseurs and doucheurs, who perform their duties under orders and occasional supervision. Suppurative joints are tapped or opened when it is necessary; those swollen and effused are treated palliatively and those with partial or complete ankylosis are left to nature until a greater power of resistance and return of secretory functions have been reestablished. This is facilitated by the daily bath, hepatic stimulants at bedtime, the ingestion of some saline mixture taken in the morning before breakfast, alkali treatment combined with salicylates, bitter tonics (columbo) and carminatives three or four times daily to promote assimilation and secretory action, moderate exercise if the patient is capable, fresh air and sun baths if possible, and a strict attention to a rational dietary regime individualized in conformity with chemico-physiologic laws leading to a speedy rehabilitation of the metabolism. Harm and annoyance and sometimes excruciating pains are inflicted upon patients when attempts to break up joints and lesions are inaugurated too early or at the onset of treatment. The same may be said of forcible massage. No patient with an already weakened constitution can withstand those onslaughts and severe shocks extended to the organism by such unskillful treatment; and the results are generally stiff joints for the remainder of life.

All other abnormal conditions are to be carefully nursed into a healthy state, if the auxiliaries can aid in making this possible: and especial attention is paid to the treatment of the urethral tract and its various complications by such surgical, mechanical, and therapeutic means as are today recognized and promulgated by the foremost writers and clinicians, embracing the use of sterilized warm or cold steel sounds, deep urethral injections of silver salts, protargol, et cetera, enlarging the meatus, milking the prostate gland, removing sinuses, fistulas threatening the perineal and perirectal regions, the ingestion of balsamic and other palliative preparations, or at times leaving the local affection entirely alone. Tonics are also given in later stages of the treatment if deemed necessary.

That powerful sulpho-iodo-bromo-salines exert a most marked and beneficial influence in assisting to arrest and destroy these gonococcic ptomains and toxins, is evinced daily by the rapid improvements manifested in the treatment of this disease. Concerning the mode of action of mineral waters, when a body is immersed in one of these mineral baths, the skin separates two salt solutions of unequal concentration, one being the blood serum and the other the mineral water proper. According to the physical law of osmosis an equalization of these two salt solutions will be sought. The baths, through the process of absorption, supply the deficient blood salts lacking in such patients and at the same time the powerful alterative effect and action of the sulphur, iodin, bromin and other mineral ingredients also absorbed in the general circulation, tend to hasten cell proliferation and eliminate from the system all waste matter by their lymphagogic action. The stimulation also imparted to the skin, peripheral nerves, the nervous and the circulatory systems in general, while the bath is being taken, assists very materially in eventually establishing normal metabolic functions of the organisms.

CIRCULAR RUPTURE OF THE IRIS.

By OVIDUS A. GRIFFIN, B. S., M. D., Ann Arbor.
LATE DEMONSTRATOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

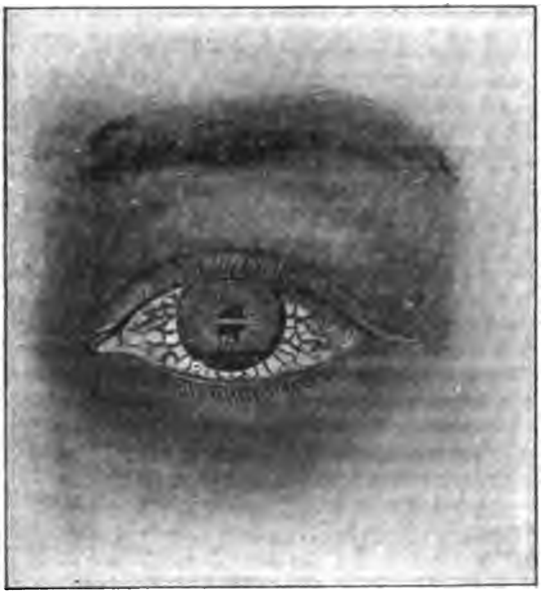
[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

Of late, several interesting papers have been presented reporting instances of radial iritic lacerations, but finding, aside from iridodialysis, little mention of circular ruptures of the iris in our principal works on ophthalmology, I beg to report a case of this rather unique condition.

On June 13, a man, fifty-six years of age, called at my office for treatment, presenting the following history: One year ago the patient's left eye became greatly inflamed, which, judging from the symptoms given, was a case of iritis attended by the formation of an hypopyon. He consulted a physician in a neighboring city who advised an enucleation which was performed after an interim of a few days. The operation was successful and the recovery uneventful.

About six months later, the patient's remaining eye became mildly inflamed, photophobic, and painful, especially at night. The pupil, which his daughter says was always large, now became smaller, though regular in outline. After about a week the symptoms disappeared, but returned within a month only to vanish again after a few days. During the attacks, the patient says, his vision was variably dimmed. This periodicity of inflammation continued for six months, when a severe form developed from "catching cold", so the patient thought, though he presented evidences of a syphilitic history. Again he called upon his former physician, who diagnosed the condition as "glaucoma" and accordingly made instillations of eserine,—judging from the patient's description of the medicine; for each application of the "red drops" caused intense pain and made the pupil smaller and irregular above, so his attendant observed.

The next day the patient called at my office and, upon examination, the following points were noted: Visual acuity was five-twelfths, tension slightly increased, pericorneal injection with some chemosis; iris lusterless, fresh hyperemia, pupil not responsive to direct or indirect light reflexes, irregular and elongated in the horizontal, together with a small, triangular aperture situated above nearly filled with blood—which conditions are shown in the accompanying sketch. A large, firm posterior adhesion was present at the upper angle of the rupture and several synechiæ at the lower pupillary border. Under atropin and calomel the extensive adhesions were broken after an interim of five days. After twelve days mydriasis and physiologic doses of potassium iodid, the inflammation subsided and his vision returned nearly to normal. The iris was now allowed to resume its position, when it was found that the rupture had healed, leaving naught but an irregularity of pigmentation to mark its position.



As no history of trauma could be elicited, the damage wrought must have been due to the myotic action of the drug upon a tissue weakened and rendered friable by the long existing inflammation, as large shreds of the iris were left adherent to the anterior capsule, after the separation of superior synechia. An interesting point in the case is the fact that one of the factors productive of the laceration was also instrumental in its repair, as the synechia above the rupture was the last to disappear, thus bringing the edges of the wound into apposition as the mydriasis progressed.

340 South State Street.

TRANSACTIONS.

NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN.

STATED MEETING, PORT HURON, JULY 25, 1901.

The President, PHILLIP A. KNIGHT, M. D., in the Chair.
Reported by A. HENRI COTÉ, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor Samuel K. Smith read a paper entitled "Placenta Previa." (See page 394.)

Doctor Platt: The paper is instructive. It records the procedure in handling the cases that the essayist has met, and conveys an idea as to what should be done when dealing with this comparatively rare condition, although, as Doctor Smith has remarked, if like cases should occur again in his practice, the former course of palliative treatment would not be repeated. I am perfectly satisfied that in managing placenta previa a physician errs in making delay after the second hemorrhage. I have encountered five or six cases, in three of which I was called at a late period, when it was absolutely necessary to perform an operation. The death rate as regards the mother has been nil, but all the children have been lost except one, which I worked over twenty minutes to resuscitate. I have recently read of four cases of threatened postpartum hemorrhage in which adrenal extract was used. In one case of postpartum hemorrhage the flow is said to have ceased entirely upon the employment of this preparation.

Doctor Wilson: I have never had a case of complete placenta previa. I have seen the placenta attached to the side. I delivered a primipara yesterday afternoon, gestation being in the seventh month. The patient was taken with a severe hemorrhage about noon yesterday. Her husband came for me and said his wife had a severe hemorrhage. I repaired to the house and found that the bleeding was due to dilatation of the uterus and detachment from the edge of the placenta. The hemorrhage had ceased and I thought I would await events. Three hours later the man called and said his wife was flowing severely and wanted me to come to the house again. Upon examination I found that labor had begun. The head of the child was impinged upon the edge of the placenta and there was not very great hemorrhage. I saved the child by applying instruments and the mother was resting quietly this morning at 5 o'clock. I always deliver immediately when confronted with this condition.

Doctor Ney: While dealing with many acute diseases and most chronic diseases, there is ample time to refer to the literature bearing upon them; but when called to the bedside of a patient afflicted with placenta previa, the physician should be prepared to cope with the situation. I am glad the subject has been presented for discussion. Only about three weeks ago I was called in consultation with Doctor Lewis, of this city, who had a case of placenta previa. The patient had a slight hemorrhage in the seventh month and another slight one the evening I called. Doctor Lewis wished to administer the anesthetic and asked me to assume charge of the labor. I found the cervix very indistinct and exceedingly high in the canal. The presentation was abnormal—the head and shoulder on the right side, the shoulder presenting, the buttocks turned to the left, and the feet flexed upon the abdomen. There was not a direct central implantation of the placenta; this organ was imbedded in the right side and extended around to the left. The body was supported on the left side so that I could put my hand up beyond it. The woman was placed under the influence of chloroform, and using two fingers I dilated the cervix sufficiently to enable me to manipulate the fetus, which I began to turn, but it would not remain in position. There was very little pain. I had considerable difficulty in getting the feet down, but after some time I succeeded, when the hemorrhage ceased. The child was alive at first but eventually succumbed to asphyxiation. Until the head became engaged in the cervix there was not sufficient dilatation. The cervix was large, following up and protruding, and there was considerable delay, so much that the cord was pressed upon and the child asphyxiated. The woman had no hemorrhage after being delivered and made a good recovery. The question arises whether Caesarean section would not be justified in dealing with central implantation of the placenta. It seems to me that a mortality of fifty per. cent. of the mothers and almost all of the children would justify this procedure if we were absolutely sure of central implantation of the placenta. We would be almost certain of saving one life in the later stages. Instead of ninety per cent. of deaths we ought to have ninety per cent. of recoveries of mothers subjected to Caesarean section. I would be disgusted with myself if I were to lose more than one patient in ten subjected to Caesarean operation, It is an easy and safe operation and one that I would not hesitate to perform if I had the endorsement of the family physician. I would rather trust these cases to the trained physician than to nature. I think they need assistance from the beginning, and it is the physician's duty to deliver as soon as he has control of an extremity, when the danger to the mother is practically over, except in cases of central implantation, and we should not wait until the second hemorrhage. I think the mortality of mother and child ought to be lowered.

Doctor Greenshields: I have practiced medicine forty years and never had but one case of placenta previa. The patient was the mother of six children. She had a slight hemorrhage, for which I employed the tampon, the remedy then in vogue, and the hemorrhage continued, eventually becoming excessive, whereupon I introduced my hand and dilated the cervix sufficiently to permit the removal of placenta and child. In a few minutes my patient was dead.

Doctor Gillett: I have had only one case of placenta previa, but I managed that one nicely. It was not a complete implantation. The edge of the placenta only covered the os until after labor began. I am inclined to the opinion expressed by **DOCTOR NEY**; I believe that Caesarean section is perfectly justifiable.

DOCTOR RANDALL: I had an experience in Detroit with a case of placenta previa. Three doctors examined the case and made a diagnosis of this condition. We wanted to give the patient chloroform and deliver the fetus, but were not allowed, whereupon we withdrew. I afterward learned that a Polish doctor delivered the child, and that the woman made a good recovery. In regard to introducing Caesarean operation for placenta previa, **SIR LAWSON TAIT** was the first person to advocate it.

DOCTOR STEWART: At what stage of pregnancy should Caesarean section be performed? I am sorry **DOCTOR WILSON** is out of the city. He had a case of placenta previa, in which I was called to assist him, that I believe he would like to report at this meeting. It was a case of central implantation and hemorrhage had been present some time. The woman was quite weak but the uterus finally contracted. **DOCTOR WILSON** was obliged to hasten away, and asked me to remain an hour. I complied, but he did not return at the appointed time, and as I also had another engagement to meet, I went away. I was not aware at that time that in low central implantation in proportion as the neck is involved in the implantation will the uterus refuse to contract and hold its contraction. Within an hour after I left the woman was taken with a hemorrhage, **DOCTOR WILSON** arrived on the scene a few minutes later, and sent for me. We knelt on a pillow and with one hand held the uterus with a sponge shoved into it, and with the other hand pressed upon the abdomen from 6 o'clock that evening until 8 o'clock the next morning. We took turns of about an hour each throughout the night. There were times when it seemed impossible for that woman to live, but she lived and withstood an operation to enlarge the vagina. The pressure caused a constriction of the upper part of the vagina until it was the size of a lead pencil, and that necessitated an operation to relieve it. That woman since has borne children. Another case was one of **DOCTOR CLANCY**'s. He had occasion to be absent from the city and left the woman in my charge. I made the mistake of letting nature proceed too far before interfering. The patient having bled quite profusely for four or five days, I called **DOCTOR STOCKWELL**, who gave an anesthetic while I introduced my hand directly through the center alongside the cord and turned and delivered the child. The woman lived six or seven days after the delivery. These are the only cases with which I have had experience. As far as Caesarean section is concerned, I believe it is the proper procedure if the child is viable, as it seems impossible to deliver a child alive when the physician has to pass his hand through the placenta. I cannot think the child would live much longer than it would if immersed in a pail of cold water. Undoubtedly certain things must be considered before resorting to operative measures. There is not always a hospital at hand, and sometimes it is difficult to procure assistance, but when these desiderata are at command, I think the Caesarean operation should be performed.

DOCTOR SMITH: I do not know that I have anything more to add to this discussion. My experience with cases in which hemorrhage occurred early prompted me to write this paper. It seemed to me that in all the cases delivery should be accomplished at once, and yet I was advised by different physicians to delay. The woman who died from placenta previa was told to be sure and advise me if hemorrhage occurred, but she allowed flowing to continue a week without her husband or my knowing anything about it. I believe had I interfered at once she would have been saved. As DOCTOR RANDALL says, SIR LAWSON TAIT was the first person to shock the obstetric world by advising the Caesarean section in these cases. I believe, in view of the mortality among children, that the operation is justifiable.

EDITORIAL ARTICLES.

PRESIDENT WILLIAM McKINLEY.

AT this date the tragic death scenes of PRESIDENT WILLIAM McKINLEY have passed from view. The last public utterance, the kindly smile, the murderous assault, the struggle for life, the last breath, all are now events of the past, and yet they are still fresh in our minds as if of yesterday, and their impress remains on our hearts. Today as we remember his last counsel, his solicitude for the dependent wife, his hopeful spirit and submissive will, we feel the presence of a great and good man. We are loth to think him dead, and yet his lips move not, nor will his hand be lifted in kindly service.

The details of the assassination of our late President are too well known and too vividly remembered to need repetition here. The daily bulletins also were as promptly and zealously posted as the eager throngs could wish. The story has all been told. This is an occasion only for reflection, consolation and thought for the future.

Afterward is a favorite time for some people to indulge in carping criticism and "I-told-you-so." It is also sometimes the only time to make any remark. It is so with us, but we do not feel critical with regard to the medical aspect of this case. It was as if the supreme efforts of their lives were required of those employed in supplying the needs of that awful occasion, and we are content to believe that they were expended to the limit. Surgical attention was prompt, courageous, dignified and careful. The only regret is that such service did not end in recovery.

The bulletins were as a rule satisfactory. They reflected the best judgment of the medical attendants. It seemed provoking, however, that he, who would naturally be supposed to know least about the real conditions of things, not having assisted or been present at the operation, should nevertheless prognosticate with the most assurance. It is possible, however, that that bulletin was incorrectly reported.

The regret has been publicly expressed that a specialist in internal medicine was not called into the case at the first, and the occasion is made use of to insist that in surgical cases generally specialists in internal medicine as well as surgeons should be consulted. In this instance it is perhaps unfortunate that the physician was not called in earlier, as, had he been, that regret would not have been felt. We are not willing to admit, however, that such a rule should be established. It is our opinion, and everyone is entitled to hold an opinion, that, except when the attending physician or surgeon feels the need of other or more experienced counsel, an undivided responsibility will insure the best results.

ANNOTATIONS.

ANARCHISTS.

THE very name anarchist excites a terror something like the fear of a venomous snake. The study of them as a class is not productive of either pleasure or interest, as some other subjects are, but, from a sociologic standpoint, few subjects are more important. On account of our recent sad bereavement it assumes unusual prominence at this time.

As a result of comparison and analysis this type is found among the criminal and insane in the large class of degenerates. All three do murder and other acts of violence, but from different motives. A common murderer represents one individual against another, while an anarchist makes war upon society as an institution and attempts to break it up. The former is an enemy of good society from personal motives, the latter is hostile only as the representative of an organized class.

As is suggested by the principals in the assassination of PRESIDENT McKINLEY, anarchists compose two smaller classes—leaders and followers—which are respectively the brains and tools of the organization. Discontent, a malignant feeling of dissatisfaction, pervades them all and rises at times to the heat of an epidemic, which spreads as by a contagion. At these times, not the individuals as such themselves, but the officers of the government are held responsible for the fancied wrongs and become the objects of assault.

The control of the exciting cause or causes and the repression of the outbreaks of this social disease constitute a great task. The infliction of severe punishment, which we in our indignation feel like bringing upon the poisoned criminal, is at once suggested, but will no more protect from further violence than will the death of one patient stamp out a contagious disease. The death of one anarchist will not prevent the making of others. By it the seeds of dissatisfaction are liable to be further spread. From the point of view here assumed and reasoning by analogy, isolation and quarantine are most prominently indicated, or, as NOYES suggests in the *Medical Review of Reviews*, "segregation and breaking up their headquarters form the only remedy." The nature of our government possibly favors or allows the spread of anarchy, but as *the people* are now anxious and determined that repressive measures be instituted, we shall look to our legislators and executive officers to carry out their, *the people's*, will.

THE PUT-IN-BAY MEETING OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

MANY Michigan doctors failed to attend a good meeting of the Mississippi Valley Medical Association at Put-in-Bay, September 12–14, 1901. Indeed, a large proportion of its members did not materialize there. The attendance was reported at about 200. These represented the South, East and West as well as the North. The papers were of a high order and discussions were practical. The limited passenger service seemed to have been disappointing. The next meeting will be held in Kansas City.

THE PREVALENCE OF SMALLPOX.

SMALLPOX continues to be prevalent. It has visited Michigan ninety-nine times during the last quarter. According to reports to the Marine Hospital Service, it exists also in several other sections of this country, in the States of South America, in India and Europe. In Paris its spread and the mortality from it have been considerable, having reached a maximum in 1900 of one hundred and thirty-two cases and fourteen deaths in the forty-ninth week, and in 1901 a maximum of one hundred and forty-five cases with twenty-four deaths during the twenty-third week. The condition in London causes equal alarm. The disease is not limited to any one part, but has appeared in at least eighteen different sections of the city. Having been a rarity for several years, considerable laxity in prophylaxis seems to have developed. It is estimated that one-third of the children in the elementary schools are unvaccinated. Many others have failed to revaccinate, so that the percentage of susceptible individuals is very large. The *British Medical Journal*, in reviewing the situation, shows some anxiety and seems to favor the proposal that the medical men of London be educated concerning the diagnosis of the disease.

CONTEMPORARY.

OPPORTUNITIES FOR MEDICAL RESEARCH IN AMERICA.

[MEDICAL RECORD.]

WHEN one pauses to examine the currents in the stream of medical progress in this country, one cannot but see that in the drift of events research in experimental medicine is gradually assuming a more and more important position. The two factors that led to the growth of the present opportunities for research in pathology, bacteriology, and hygiene were the evolution of the American university from a mere "boarding school where the elements of the learned languages were taught to youths," as MR. PATTISON, rector of Lincoln College, once said of Oxford, to a seat of learning and research modeled after the German prototype, and the development of the old-fashioned American medical school, with its two-years curriculum of didactic lectures, into the modern type with four years of thorough training in laboratory and clinic.

Twenty-five years ago there was scarcely any provision for the pursuit of medical research in this country. The laboratory of the College of Physicians and Surgeons of Columbia University was established in 1878 —twenty years after the appearance of the first edition of Virchow's *Cellular-pathologie* and twenty-eight years after the discovery by DAVAINE of the first important pathogenic germ – that of anthrax. The Carnegie Laboratory of the Bellevue Hospital Medical College was opened in 1885; the Loomis Laboratory of the New York University (now of Cornell University) in 1886; the Hoagland Laboratory in Brooklyn in 1888, and the Johns Hopkins Hospital Laboratory in 1889. The corner-stones of the other pathological laboratories throughout the country for the most part bear later dates.

Today there is scarcely a second-rate medical school in these states that does not provide some opportunities for medical research. At Johns Hopkins, Columbia, Harvard, Pennsylvania, Chicago, and some of the other universities there are scholarships and fellowships open to qualified workers in pathology and allied themes. At each of these institutions, there are on the average from three to five such fellowships. Thus, for example, there are at Columbia the three fellowships of the Alumni Association, the Alonzo Clark scholarship and the Maria McLean Proudfit fellowship, five in all. The number of leading laboratories in which such fellowships and scholarships are maintained may be estimated to be, at the highest, ten; so that there are at present about forty men in this country who receive incomes for research in medicine.

The recently organized Rockefeller Institute for Medical Research will make possible the appointment of about forty additional men; in other words, will double the number of men engaged in this work in America who are paid salaries and who are not necessarily occupied in teaching.

The plan of work of the Rockefeller Institute excludes, for the present, any expenditure for a building, though the ultimate desirability of a central laboratory is not ignored by the Board of Directors. In this, we fancy, the directors are following the advice of HUXLEY, as given in his address at the opening of Johns Hopkins University, September 12, 1876: "It has been my fate to see great educational funds fossilize into mere brick and mortar in the petrifying springs of architecture, with nothing left to work the institution they were intended to support."

MR. ROCKEFELLER placed at the disposal of the directors two hundred thousand dollars, of which the sum of twenty thousand is to be expended annually. It is understood that the gift will be increased as the demands of the work grow. This money is to be divided, according to the present plans of the Board of Directors, into sums averaging about five hundred dollars each, which shall be paid annually to the holders of the scholarships or fellowships established by the institute. In special cases, the salaries will be made larger, but in others the remuneration may be less than the average. The appointments are to be made in each case for one year only, although reappointment for another year will probably be given to such men as require more time for the completion of their work. The candidates will be recommended to the Board of Directors by the heads of the various laboratories, and from the list thus formed the directors will make their selections. Each candidate must be certified as to his qualifications, especially as to his ability to carry on the research undertaken, and must be pursuing or about to pursue an investigation on some important subject in pathology, bacteriology or hygiene.

It is evident that this plan is in every way calculated to secure the object of MR. ROCKEFELLER's gift. Yet, in one respect, we should venture to suggest a change, namely, as regards the salaries paid to these workers. Five hundred dollars may be a bait to the recent graduate, but one cannot expect a man of maturer years and increased financial needs to give most of his time for so small an annual income. While a certain number of beginners in pathological research may be admitted to these scholarships, it would certainly be advisable, if not necessary, for the attainment of results of the greatest value, that men of experience who have already made their mark in science be attracted toward this corps of investigations by salaries representing a modest, but sufficient competence. It must not be forgotten that the attention paid to the results of an investigation by the scientific world is directly in proportion to the amount and value of the investigator's previous work, and that the weight of his conclusions depends upon the same factor.

Again, if the appointments are made for one year only, the personnel of this body of workers will constantly change. What advancement in the ranks of his fellows will be open to the scholar who has completed an investigation on a difficult and unexplored question, and what will become of him after his term of scholarship is at an end? Every one of the forty or more Rockefeller scholars cannot obtain an academic appointment at the end of his year of scholarship—there are too few vacancies in the universities for that. It would seem better to arrange for a system of grades with increasing salaries in which promotion will be secured by length of service and value of work done, for in this manner there would be a survival of the fittest, the lower ranks changing from year to year, the upper being filled by scientific men of the highest type. The Rockefeller scholars would then not be in the position of our army contract surgeons, who have nothing to look forward to except an honorable discharge, promotion or pension being out of the question. The institute would rather support a body of men who could devote themselves entirely to research, and who would not be obliged to teach or do other work to make both ends meet. A good teacher is not always a good investigator, and one who is unsurpassed in research may not be able with success to impart his knowledge to others. In such cases the universities might contend among themselves for the honor of having a Rockefeller research scholar on their academic staff. In this way the institute will become a nursery for both teachers and investigators and its fellowships will be steps to the highest academic honors.

MEDICAL NEWS.

NECROLOGY.

Doctor Thomas Masters Markoe, of New York City, died Monday, August 26, 1901, aged eighty-two years, having been born in Philadelphia, September 13, 1819. The doctor received his literary education at Princeton College, graduating in arts in 1836, after which he began the study of medicine, graduating from the College of Physicians and Surgeons of New York in 1841. He was identified with the New York Hospital for over fifty years, having entered that institution as an interne in 1839, two years prior to receiving his medical degree, and three years later he became curator of the Pathologic Museum, from which position he advanced to active service on the attending surgical staff in 1852, retaining this connection until 1892, when, at his urgent request, he was retired and made consulting surgeon. His career as a teacher began soon after graduation in a professorship of anatomy at Castleton Medical College in Vermont. From 1852 to 1854 he occupied the chair of pathologic anatomy in the medical department at the University of the City of New York. In 1860 he was elected adjunct professor of surgery in the medical department of Columbia University; in 1872 he was elevated to the full professorship of surgery; and in 1879, when the responsibilities of this chair were divided, he assumed the professorship of the principles of surgery. From this position he passed to an emeritus professorship, which he held at the time of his demise. At the outbreak of the civil war he was appointed a volunteer surgeon and stationed at Fortress Monroe. He rendered service in the field and in brigade hospitals, and acted in various other capacities throughout the conflict. In private practice he soon achieved success, although his income for the first year amounted to only about ninety-two dollars. He early formed a partnership with Doctor Edward Delafield, which continued for sixteen years, after which a partnership was formed with Doctor Francis Delafield. He enjoyed an extensive connection as attending and consulting surgeon to various New York hospitals, and was associated with a number of societies and clubs—charitable, literary, artistic, and musical. He was the author of a practical work on diseases of the bones and an occasional contributor to medical journals. As an operator he was more conservative than brilliant, but many of his methods were original. As a man he was conscientious and cultured.

THE POSTMORTEM ON THE LATE PRESIDENT.

The official report of the autopsy on the body of President McKinley is given below. Doctor Harvey D. Gaylord, pathologist of the New York State Laboratory, assisted by Doctor Herman G. Matzinger, of the same institute, performed the examination in the presence of the physicians and surgeons who attended the distinguished patient. There were present besides the physicians whose names are appended to the report, District Attorney Penney, of Buffalo, and Doctor Charles McBurney, of New York, who was obliged to leave for home before the completion of the autopsy:

"The bullet which struck over the breastbone did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed by the stitches, but the tissue around each hole had become gangrenous. After passing the stomach, the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet track was also gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt to repair by nature, and death resulted from the gangrene, which affected the stomach around the bullet wounds, as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment, and was the direct result of the bullet wound.

"Harvey D. Gaylord, M. D.,
"Herman G. Matzinger, M. D.,
"P. M. Rixey, M. D.,
"Matthew D. Mann, M. D.,
"Herman Mynter, M. D.,
"Roswell Park, M. D.,
"Eugene Wasdin, M. D.,
"Charles M. Stockton, M. D.,
"Edward D. Janeway, M. D.,
"W. W. Johnson, M. D.,
"W. P. Kendall, Surgeon, U. S. Army,
"Charles Cary, M. D.,
"E. L. Munson, Assistant Surgeon, U. S. A.
"Hermanus L. Baer, M. D."

MINOR INTELLIGENCE.

Two men employed in a newspaper office at Rio de Janeiro, Brazil, died of the plague on September 5.

Mrs. Elizabeth M. Devine has been appointed health inspector of Orange, New Jersey, at a salary of one thousand dollars a year. The appointment was urged by several women's clubs of that city.

King Edward, of England, is reported to be suffering from a derangement of the heart which stubbornly resists all treatment.

Mackinac Island has another attraction, a new hot spring, which has been discovered in the vicinity of the city waterworks. Its water has a temperature of 104°.

Doctor Joseph A. Kelly, of Chicago, has been appointed vaccine physician by the health department of that city. The doctor is a graduate of the University of Michigan, class of 1898.

Doctor Victor C. Vaughan, of Ann Arbor, read a paper on "Cirrhosis of the Liver" at the quarterly meeting of the Jackson County Medical Society, which was held at Jackson, Tuesday, October 8. The paper will be published in an early issue of The Physician and Surgeon.

The Sisters of Mercy have recently established at Silver City, New Mexico, Saint Joseph's Hospital for the especial care and treatment of consumptives. Doctor E. S. Bullock, formerly of New York City, and a graduate of the Detroit College of Medicine, has been appointed Chief Medical Officer of the institution.

Spitting is prohibited on the streets of Paris. The following notice announcing that the nuisance must be abated was recently distributed broadcast throughout the metropolis: "The public are earnestly requested, in order to avoid the danger of propagating tuberculosis and other zymotic diseases, not to spit in the streets."

Two physicians at Manasquan, New Jersey, have been sued for ten thousand dollars by a woman whom they employed to nurse smallpox patients. The plaintiff accepted the position under the assurance of the defendants that the disease was not contagious, but during the course of her ministrations she contracted variola and now institutes litigation to recover damages.

The late Doctor A. J. C. Skene, of Brooklyn, donated a library to Griffin's Corners, New York, some time prior to his demise, and intended to erect a building for its accommodation, but sudden death prevented the perfecting of his plans. Andrew Carnegie will now provide a suitable structure which, in memory of the donor of the books, will be christened the Skene Library.

Mademoiselle Bottard, aged eighty-three years, has ministered as nurse in the Salpêtriere nearly sixty-two years, having entered that institution in 1840. She commenced her hospital career on a salary of twelve francs a month and recently concluded her long service by receiving a decoration and a pension. Mademoiselle now wears the cross of the Legion of Honor.

The question of the inviolability of professional secrecy was recently settled in a certain Parisian court. While visiting at the home of his sweetheart the plaintiff in the cause suddenly became seriously ill, and the anxious prospective mother-in-law briskly interrogated the physician regarding the nature of the ailment. The information disclosed by the medical attendant had the effect of annulling the engagement and precipitating a lawsuit in which the patient charged the physician with a breach of professional secrecy. The judge fined the defendant two hundred francs and decreed that he reimburse plaintiff with one thousand francs additional to soothe the mental anguish occasioned by a wounded heart.

DOCTOR EDWIN S. RICKETTS, of Cincinnati, was elected president of the American Association of Obstetricians and Gynecologists at its annual meeting which was held in Cleveland, September 17–20. The Cleveland Medical Society and the Cuyahoga County Medical Society entertained the members of the national association at a smoker on the first evening of the meeting. Washington, District of Columbia, was selected as the place at which the meeting of 1902 will be held.

DOCTOR C. B. BURR, of Flint, secretary of the American Medico-Psychological Association, has issued a card announcing a change of date from June 10–13 to June 17–20, 1902, for the next meeting of this association. In consequence of the meeting of the American Medical Association at Saratoga on the former dates, the council made the change from the second to the third week in June and requested the president and secretary to engage accommodations at the Windsor Hotel in Montreal accordingly.

THE preliminary program of the first Egyptian Congress of Medicine has been issued. The congress will convene at Cairo under the presidency of Doctor Ibrahim Pacha Hassan, December 10, and will continue its sessions four days. The diseases peculiar to the natives of Egypt will receive especial consideration, among them being bilharzia, ankylostome duodenal, bilious fever, hepatic abscess, purulent ophthalmia, plague, et cetera. This gathering will be chiefly composed of Moslem, Greek, Russian, and French physicians.

DOCTOR SOPHUS BANG, of Copenhagen, has invented a new electric lamp for employment in phototherapy. The power of the light emanating from this special lamp to destroy bactericidal life is reported to be ten times greater than that furnished by the lamp heretofore in vogue for administering the light-rays treatment. Doctor Bang is an assistant to Doctor Finsen, the originator of this novel method of dealing with lupus and various other affections. The lamp imparts a feeble light but is rich in chemic rays. Metal poles are preferred to carbon.

DOCTOR SAMUEL K. SMITH, of Port Huron, has a paper on "Placenta Previa" in another department of this issue. This paper is the first of a number that were read at the July meeting of the Northeastern District Medical Society of Michigan and which will be published in The Physician and Surgeon. The officers of this, the oldest medical society in Michigan, are as follows: President, Doctor Phillip A. Knight, of Utica; vicepresident, Doctor George S. Ney, of Port Huron; secretary-treasurer, Doctor A. Henri Coté, of Port Huron. The next meeting will be held at Lapeer, the last Thursday in January, 1902.

DOCTOR THOMAS J. TURNER, of Coldwater, Michigan, died August 20, while sojourning at Mackinac Island. The doctor was health officer of Coldwater at the time of his demise and was likewise a retired naval officer, having entered the navy in 1853. He served as fleet surgeon on Admiral Farragut's ship, Hartford, during the engagement in Mobile Bay, and subsequently officiated as medical director of the United States Navy, from which position he retired in 1882. At one time he was chief of the Bureau of Hygiene, and later was detailed to serve as Secretary of the National Health Board. Doctor Turner graduated from the medical department of the University of Pennsylvania in 1851.

THE Mississippi Valley Medical Association adjourned on the morning of the 14th instant, after a most successful meeting, in manifestation of respect for the martyred McKinley. The twenty-eighth annual meeting of this organization will be held at Kansas City, Missouri, in October, 1902. In the meantime the affairs of the society will be conducted by the following officers: President, Doctor Samuel P. Collings, of Hot Springs, Arkansas; first vicepresident, Doctor James C. Culbertson, of Cincinnati, Ohio; second vicepresident, Doctor Paul Paquin, of Asheville, North Carolina; secretary, Doctor Henry E. Tuley, of Louisville, Kentucky; treasurer, Doctor Thomas H. Stucky, of Louisville, Kentucky; chairman of the committee of arrangements, Doctor Albert H. Cordier, of Kansas City, Missouri.

PROFESSOR J. PLAYFAIR MCMURRICH, who occupies the chair of anatomy in the University of Michigan, was a delegate to the International Zoölogical Congress which convened at Berlin in August. Other Americans who augmented the gathering were: Doctor Charles W. Stiles, of the Department of Agriculture, at Washington; Mr. Leonard Steinger, curator of the National Museum; Professors Mark, of Harvard; Murrell, of Cornell; Wilson, of Columbia; Patton, of Dartmouth, and Woodworth, of California. Zoölogical nomenclature was a question that elicited considerable discussion. A simple system with abbreviated terms was favored by the American delegates; a modification of the nomenclature in vogue, which contemplated adjustment with the classic forms, etymologically and grammatically, was proposed by the French; while a compromise overture proceeded from the Germans. The modification suggested by the French was adopted by the delegates.

RECENT PUBLICATIONS.

REVIEWS.

ELECTROTHERAPEUTICS AND X-RAYS.*

As the author remarks in the preface, this work is a "Materia Medica" of electricity. The beginner will be able from a careful perusal of it to have an intelligent idea of the subject. Section I is devoted to electricity; Section II to special electrotherapeutics and Section III to X-Rays.

* By Doctor Charles Sinclaire Elliott. Boericke & Tafel, Philadelphia, Pennsylvania. Price, cloth, $2.50. By mail, $2.70.

PHYSIOLOGY.*

THE author calls this a compend of human physiology It does contain the essentials of this subject in condensed form, but there are no questions artificially arranged and for this reason we like the work the more.

* By Albert P. Brubaker, A. M., M. D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College, et cetera, Tenth edition, revised and enlarged. With illustrations and a table of physiologic contents. P. Blakiston's Son & Company, Philadelphia, Pennsylvania. Price, $0.80.

COMPEND OF OBSTETRICS.*

Little needs to be said of a book of which so many editions have been demanded. It comes self-recommended.

* By Henry G. Landis, A. M., M. D. Revised and edited by William H. Wells, M. D. P. Blakiston's Son & Company, Philadelphia, Pennsylvania. Price, $0.80.

ESSENTIALS OF SURGERY.*

This compend was a good one in its first edition. The present, seventh edition, is correspondingly better in its changes and additions.

* By Edward Martin, A. M., M. D , Clinical Professor of Genito-Urinary Diseases in the University of Pennsylvania. Illustrated. W. B. Saunders, Philadelphia. Price, $1.00.

MEMORANDA OF POISONS.*

As a compendium of notes on poisons this little manual of about one hundred and seventy-five pages will be useful for purposes of ready reference. This is the eighth revised edition.

*By Henry Leffman, A. M.. M. D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, et cetera. Price, $0.75. P. Blakiston's Son & Company, 1901.

DISEASES OF THE SKIN.*

This compend embraces the essentials of this subject. The text is printed in better type than is afforded for some of these books and is well illustrated.

* By Jay F. Schamberg, A. B., M. D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine. Second edition. P. Blakiston's Son & Company, Philadelphia, Pennsylvania. Price, $0.80.

ESSENTIALS OF HISTOLOGY.*

This author's method of compend-writing is, in our opinion, preferable to the usual style. We like clear and condensed statements of the subject with questions at the end of each chapter such as this gives.

* By Louis Leroy, B. S., M. D., Professor of Histology and Pathology in Vanderbilt University. 72 illustrations. W. B. Saunders & Company, Philadelphia, Pennsylvania. Price, $1.00.

JOHNS HOPKINS HOSPITAL REPORTS.*

This volume contains seventeen excellent reports bearing upon different phases of typhoid fever. Four contributions are from the pen of Doctor William Osler, two from Doctor Norman P. Gwyn, and the rest from as many authors. Their original character marks them as most valuable.

* Volume VIII, Numbers III–IX. The Johns Hopkins Press, Baltimore.

ESSENTIALS OF MEDICAL DIAGNOSIS.*

THIS book contains a vast amount of information within a small compass. The question method is used, but the questions are of a general character like headings and answers are given by paragraphs. It is one of the best in the series.

* By Solomon Solis Cohen, M. D., and Augustus A. Eshner, M. D., Illustrated. Second edition, revised and enlarged. Philadelphia, Pennsylvania. Price, $1.00 net.

ORTHOPEDIC SURGERY.*

THE medical profession may well feel great pride in the development of orthopedic surgery. It represents the most humane feature of general surgery in that it deals so largely with prophylaxis. We are now supplied with several excellent works on this subject,but none are more comprehensive and attractive than this one. It takes up the several phases of the subject in a systematic manner, treats them logically and well nigh exhaustively, and withal beautifully illustrates them.

* By Royal Whitman, M. D., Adjunct Professor of Orthopedic Surgery, New York Polyclinic, Instructor in Orthopedic Surgery in the College of Physicians and Surgeons, and Chief of Orthopedic Department in the Vanderbilt Clinic, New York. In one handsome octavo volume of 642 pages, with 447 illustrations. Cloth, $5.50 net. Lea Brothers & Company, Philadelphia and New York, 1901.

A SYSTEM OF PRACTICAL THERAPEUTICS.—VOLUME II.

THE second and what may be called the medical volume of this valuable work, includes articles on the therapeutics of typhoid fever, malarial fevers, smallpox, varicella, rubeola, rubella, and scarlatina, yellow fever, dengue, acute tonsillitis and influenza, acute articular rheumatism, diphtheria, spasmodic croup and rickets, diseases of the mucous membrane of the mouth, and mumps, croupous and catarrhal pneumonia, asthma, bronchitis and whooping-cough, acute and chronic organic diseases of the heart, diseases of the blood-vessels, nervous diseases of the heart, diseases of the stomach, of the liver, gall-bladder, hepatic duct, and spleen, diarrheal diseases and dysentery, the intestinal parasites, diseases of the kidneys, headaches and neuralgia, the drug habits, the disorders of sleep, locomotor ataxia, acute infantile spinal paralysis, myelitis, and amyotrophic lateral sclerosis, apoplexy, brain tumor, spinal tumor, meningitis, cerebritis and neuritis, spasmodic affections of the nervous system, the medical treatment of insanity, hospital treatment of insanity, and the modern treatment of diseases of the skin. The contributors include besides the editor a number of recognized authorities, among them being Doctors William H. Welch, Frederick C. Shattuck, Sir Lauder Brunton, John H. Musser, F. X. Dereum, and James M. Anders.

*Edited by Hobart Amory Hare, M. D., Professor of Therapeutics, Jefferson Medical College; Physician to Jefferson College Hospital, et cetera, Philadelphia. New (second) edition, thoroughly revised. In three very handsome octavo volumes, containing 2593 pages, with 427 engravings, and 26 full-page colored plates. Per volume, cloth, $5.00 net; leather, $6.00 net; half morocco, $7.00 net. Lee Brothers & Company, Publishers, Philadelphia and New York, 1901.

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ORIGINAL CONTRIBUTIONS.

ADDRESSES.

THOUGHTS CONCERNING MEDICAL PROGRESS.*

BY ARTHUR D. HOLMES, M. D., C. M., DETROIT, MICHIGAN.
PROFESSOR OF THE DISEASES OF CHILDREN IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

I SHALL not attempt to deny that a year ago when the distinction of being president of the Academy was conferred upon me the kindness was the source of the greatest satisfaction to me, because it signified your esteem and your good will, which I value beyond expression. I well know that the compliment is beyond my merit and that I owe it to your generous desire to encourage a young member in becoming worthy of your respect and friendship. I am sure you will understand why I felt an anxious desire concerning the success of the year's work. To reach this end I relied entirely on the Fellows, and I feel now, at the expiration of my term of office, that my confidence in their aid and support has not been misplaced. The attendance at our meetings has been above the average, the papers have been excellent, the discussions general and intelligent and the utmost harmony has prevailed throughout the year. I have no doubt that the older and more distinguished members of this society have derived much advantage from the papers they have presented and from the discussions in which they have participated, but it is doubtful if they fully estimate the boon they have thus conferred on their younger and less experienced confreres. In this respect I desire to express the personal obligation I feel and to acknowledge the advantage I have derived from the mature wisdom and the ripe experience of those with whom I have had the privilege of association. While the Academy may feel a just pride and satisfaction in the work and progress of the past, it would not be in accord with the true spirit of medicine to be satisfied so long as the medical horizon can be enlarged, or the zenith more nearly attained, and I have thought that it might not be inappropriate on this occasion to consider some of the means that would conduce to even greater achievement in the future than has adorned our history in the past.

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* Retiring President's Address before the DETROIT ACADEMY OF MEDICINE, October 8, 1901.

There are few discoveries and but little progress made in any department of knowledge except by diligence, close observation and earnest work, and this is especially true of all knowledge pertaining to the science of medicine. The physician of wide experience and profound attainments may prepare a paper, or participate in a discussion without long study and preparation, but the average man in the profession will be heard with much more pleasure and far greater advantage if the views he enunciates are the result of deep thought and careful preparation. Work performed in this way is what lends distinction to the worker and sheds luster on our society, and it is certain that a general conformance to this plan would not only maintain this Academy in the proud position it occupies, but would augment its fame and its usefulness in the future. If means were adopted to inform the Fellows of our society of the subject of essays to be read at the meetings, and of the propositions to be sustained by the authors, it is certain that discussions would be more scientific and conclusions more in accord with truth. Discussion carried on in any other way cannot but be sometimes jejune or meretricious and so almost valueless.

The failure of members to perform work assigned them, especially failure to prepare papers, is a serious disappointment and a great wrong to all. Such delinquencies should not occur without unavoidable cause, and even then a substitute should be provided so that disappointment may be prevented. No part of a medical man's time is more profitably spent than that devoted to the writing of a scientific paper, because the thought and research necessary improve the mind, augment the knowledge, and render accurate and available all that has been read or discovered in one's life and in intercourse with others. The Academician, therefore, who faithfully and conscientiously performs his duty in this respect will not only benefit himself but he will place under obligation every member of the Academy, and he who is at some pains to be familiar with the subject of the paper read, will discuss it with more definiteness, and any diffuseness or irrelevancy would be of rare occurrence in our discussions. Not the least of the advantages which membership of the Academy confers upon a physician are the harmony and good-fellowship that are so characteristic of the meetings. The cultivation of a spirit of friendship and fairness among medical men renders a life of care, anxiety and responsibility much happier by eliminating a large part of the jealousy and misunderstanding that are so subversive of individual happiness and public respect.

Aside altogether from the somewhat circumscribed relations of physicians toward each other and toward their patients, are many important duties devolving upon them as citizens, duties that none can so well perform as members of the medical profession. It would exceed the limits of this address to even refer to these in detail, but there is one subject so important and so fraught with evil to those who deserve good from their country, that it may not be considered inappropriate to refer to it. This country recently had a painful and expensive object lesson in the delays and mismanagement connected with the Army Medical Corps. Untold suffering and the loss of many valuable lives have resulted from delays and ignorance of incompetent officials, men who have been placed in positions they were entirely unfitted to fill, with almost unlimited power to obstruct and to harass those acting under them and who alone by special knowledge and training were competent to act. The duties of the Secretary of War are certainly onerous enough without the extra burden of overseeing and directing the medical department of the army, even if such matters were familiar to him. This work would be much more efficiently performed by a cabinet official chosen from the medical profession and having the same authority and the same responsibility that belong to other heads of departments. The wisdom of placing sanitary matters unreservedly in charge of medical men has been happily illustrated in the remarkable change that has taken place in Santiago since DOCTOR WOOD assumed his duties there. From being a pestilential hotbed it has suddenly become one of the cleanest and healthiest of cities and its tainted air no longer spreads death to our shores.

We are justly proud of our free institutions and of our political system, but it cannot be denied that this system which works so beneficently in most respects has some countervailing drawbacks. Local health officers are generally chosen through political influence, rather than through merit, and even when by chance really competent men are chosen, the tenure of office is uncertain, and as a matter of fact, a change is often made without legitimate cause, and the man who may have relinquished a lucrative practice to accept the position of health officer finds himself out of office as well as out of practice. This cannot but tend to degrade the office and to prevent really competent men from accepting it.

The standard of medical education in this country has been greatly improved of late years, and men of high scientific attainments are becoming more numerous every year, but until a standard of matriculation is everywhere established that will necessitate and guarantee the entrance into our medical colleges of only young men of good preliminary training and education, there will continue to be turned out of our colleges men unfit for the high and responsible duties that come to every member of our profession. The honor and respectability of our profession is in our own keeping, and he will leave an honored name who sets for himself a high standard and lives up to it, nor will he need to resort to questionable methods, so common and so humilitating, to rise to eminence in his profession. The Academy of Medicine in this city embraces the names of men of high character and noble purpose, and it is not unreasonable to believe that their united influence in the community and in our legislative halls could be made to bring about changes that would ultimately consign to oblivion those fakirs and charlatans who parade their imposition under the names of faith cure, Christian science, osteopathy, and a score of other guises, equally absurd and equally fraudulent. It is difficult to believe that in this great country whose institutions are so beneficent, whose advancement in the arts and sciences and whose progress in wealth and education have been so remarkable, should continue to look with unconcern upon some matters that lie at the very foundation of all national prosperity. How would law makers and the public generally view the claims of a man aspiring to the command of an ocean steamer who would ignore the use of the compass and designate fogs, shoals, coral reefs and icebergs as imaginary dangers, and the science of navigation as a useless acquirement? And yet legislators are to be found in every state of the Union who seem to think the human machinery may be safely intrusted to the care of men and women who can lay no claim to special skill, and whose very ignorance leads them to tamper with human life in a way that would not be permitted in any other branch of human affairs.

There is abundant reason to believe that the almost fanatical belief in freedom that inspired our forefathers has been carried to extremes that threaten the safety and welfare of society. Freedom of speech is an admirable thing, but when this freedom is so abused as to be a menace to the lives of the best men in the state, it is surely time to adopt repressive measures; and so, too, in medicine, when human lives, often lives of irresponsible children, are sacrificed to the criminal ignorance of so-called Christian science, or other association of knaves or fools, it is time to restrain their desire for notoriety or their greed for ill-gotten gain. The unrestrained license allowed in these matters in this country has brought humiliation and reproach upon us and has degraded the profession in the eyes of every European nation where an American degree in medicine is not always considered a passport of respectability and where such degrees are not accepted as a guarantee of education or of skill. It is true that many of our colleges send forth highly trained graduates, the equals of any in the world, but these are obliged to partially bear the odium of those whom the law recognizes as their equals, and whose only claim to recognition is their unbounded arrogance and self-assertion.

If our Academy could, in addition to the scientific work accomplished, adopt measures to repress that dangerous ignorance and unscrupulousness which are productive of so much evil to the public, it would increase its benefactions and lay society under tribute for aid rendered in the abatement of an evil that is potent to every truly wise and thoughtful person, and that cannot but retard the progress of this country in those high and noble purposes that lie at the very foundation of true national greatness.

Fellows, in retiring from the honorable position in the Academy, which I have, through your kindness, occupied during the past year, I wish to thank you for the uniform courtesy extended to me as presiding officer, and for the kind consideration manifested toward one quite inexperienced in official duties that devolve upon the incumbent of this office. The year's work has been very pleasant to me and very inspiring, and if my professional life hereafter should be marked by greater effort and stimulated to higher aims and nobler purpose, I shall attribute these in a large measure to the example and to the encouragement of those over whom I have had the honor to preside.

MEMOIRS.

INSOMNIA IN EVERYDAY PRACTICE.*

BY DAVID INGLIS, M. D., DETROIT, MICHIGAN.
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(PUBLISHED IN The Physician and Surgeon EXCLUSIVELY)

IN presenting the subject of insomnia my purpose is not to undertake an exhaustive consideration of it, but to endeavor to present for your consideration and discussion some practical points, some phases of the affection which must appeal to us all. Let me first call your attention to that homely subject, the farmer's hired man.

The hired man rises early and works a long day. No eight-hour day for him. Enough if the meat and potatoes and bread and cheese, the pickles, preserves and pie are abundant. His intoxicant is white tea or buttermilk. The chores are ended, a brief stretching of his legs toward the fire and he repairs to bed. Notice how promptly he sleeps, and then try to rouse him; and, considering the perfection of his sleep, remember that every muscle in his body has been long and vigorously used, every excretory organ has worked admirably, lungs, skin, kidneys, liver and bowels, have shared in the general activity. Why does he sleep and why does he sleep so well? No philosophy of insomnia can be complete which does not take cognizance of the hired man.

In any consideration of insomnia it is necessary to have some understanding of the causes of ordinary sleep. Here, as in many other instances, we are likely to fail in the proper comprehension of the matter if we attempt to explain the phenomena by searching for only one cause. It seems to me that, only by recognizing the fact that sleep is due to a combination of various causes, can we understand either sleep itself or the disorders of sleep. There has been much discussion as to whether the anemia of the cerebral blood-vessels, which undoubtedly exists during profound sleep, is the cause or consequence of sleep; the probability is that it is both. We are all familiar with what is known as the "vicious circle" in disease, by which a thing may be, at the same time, both a cause and an effect. Similarly there seems to be good reason to believe that cerebral anemia is both a cause and an effect of sleep. That cerebral anemia alone is not sufficient to cause sleep is manifest by the fact that in the most profound cases of general anemia the patient may sleep neither more nor less than the average individual, and yet there is every reason to believe that in normal individuals a marked variation in the amount of blood circulating in the cerebral blood-vessels does have a considerable influence upon sleep.

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* Read before the DETROIT MEDICAL SOCIETY, September 18, 1901.

The great coöperating cause of sleep seems to be, undoubtedly, exhaustion of the cerebral protoplasm. We can make the process visible to ourselves by watching the exhaustion of the contractility of an ameba under repeated excitation. If the ameba be irritated with sufficient persistency it simply fails to respond to the stimulus. When we consider the incessant flow of stimuli which are entering the brain cells during the day's activity it is not at all difficult to comprehend why the brain cells should finally reach a point at which they cease to respond to normal stimulation. We are, all, personally familiar with this physiologic fact. We know how, as drowsiness comes on, a rapidly increasing intensity of stimulus is required to bring a response—as we say, to keep us awake—and the time finally comes when any amount of stimulus is insufficient. Men have been known to lie down beside a cannon during a bombardment and sleep soundly.

A third cause of normal sleep deserves to be mentioned, the narcotic effect upon the protoplasm of the effete matters produced in the protoplasm by its activity. The molecular changes which go on in the protoplasm are so far beyond our scrutiny that it is impossible to draw any hard and fast line between the part played by such autointoxication of the cell and pure exhaustion of the cell. And yet, the phenomena of disease make it altogether probable that these two causes are essentially different; that exhaustion alone does not suffice to explain normal sleep is at once evident when we consider the phenomena of irritable weakness in a pronounced case of neurasthenia. Nothing is more evident than the fact of the exhaustion of the nerve elements in neurasthenics, and yet it is precisely in these cases that are sometimes found the most troublesome forms of insomnia. The exhaustion alone clearly does not produce sleep, but the opposite.

A fourth contributing cause must by no means be omitted. This is that inexplicable, but undeniable thing which we call will power. We can, within certain rather wide limits, will to remain awake or we can will to go to sleep; even more, we can will to awaken at a certain period. It might be said that all that will power has to do in the matter of effecting sleep is to compose the body in such ways as to reduce to a minimum the number and intensity of stimuli coming from the outer world which serve to retain us awake; but we can, by our will, do much more; we can control those internal stimuli which we call thoughts, can, to a large extent, inhibit the mental processes, and many of us can will to go to sleep when we please. The hired man can, if he wills it, lie down under a favorable tree at 11 A. M. and sleep soundly—always providing that the employer is away. He can set himself to sleep half an hour. Clearly cell exhaustion, cerebral anemia, cell autointoxication, are not the only contributing causes of sleep.

Closely allied to the inhibition by the will are the phenomena of expectant attention, of suggestion and autosuggestion. It would lead far away from the limits of this paper to discuss these problems. Enough that when we consider the treatment of insomnia we keep these factors in mind.

Coming now to the subject of insomnia let us take up, first, those simple cases, of very frequent occurrence, in which the patient complains that he is a long time in getting to sleep and that sleep never comes until his cold feet grow warm. There are all grades; some have cold legs, cold knees; some are in a dull, cold misery all over. Such are those elderly people who promise to stay cold all night. These are the cases which have given rise to the theory that the single cause of sleep is cerebral anemia. In these cases the cutaneous circulation, the circulation in the extremities, is too little, the circulation in the brain too much. The insomnia is due to a persistent vigor of circulation in the cerebral vessels, which keeps up a mental activity and refuses to stop. No will-power, no suggestion suffices to bring sleep, and the assertion that such an activity of cerebral circulation is the cause of the insomnia is correct.

In managing such cases of insomnia a careful study of the activity of the arterial circulation will, in many instances, give us a clew to the successful treatment. In the case of persons who find that on going to bed the cutaneous circulation is poor, in whom the body, feet and legs feel cold, measures which will restore the active circulation of the blood throughout all parts of the body are of the greatest service, and here the study of the individual and the way in which he reacts becomes essential. Many persons after a cold bath remain cold, chilled and depressed for a long time. Such persons as these, if they be sufferers from insomnia, need to have the bed thoroughly warmed. If now, in addition, we put to the lower end of the spine a bag of hot water it is often gratifying to see how quickly the general circulation in the extremities is restored. In passing, let me call attention to the value of heating the lower end of the spine. When a man comes in thoroughly chilled through from a long winter's drive he goes to the nearest stove or open fireplace, leans over and rubs his hands for a moment, then turns around, spreads his coat-tails, and unconsciously, but none the less absolutely, proceeds to warm his sacrum. He is not cognizant of the physiologic meaning of the process, but he knows that as soon as the lower end of the spine is thoroughly warmed he will be warm all over. The hot-water bag to the chilly old man or debilitated woman is a reasonable and delightful application of the same physiologic principle. Patients of this sort, too, will find the greatest benefit from taking a thorough warm bath just before going into a warm bed.

There are other patients who react very promptly to the cold bath; they are the persons who get into a warm glow on coming out of a quick, cold bath almost before they have taken time to dry themselves. When we are dealing with patients of this sort, instead of a warm bath a quick cold bath and vigorous rubbing before getting in between the cold sheets will bring about such a vigorous reaction that in a short time the patient feels a glow of comfortable warmth and falls asleep. These patients are the ones who are benefited by the device of rubbing a chunk of ice up and down the spine followed by vigorous rubbing, just on retiring. Many of these patients learn to accomplish the same end by taking a hot whisky toddy before entering the bed. The warmed bed and the hot-water bag to the sacrum is safer for steady practice, and many of these patients are precisely the ones in whom such measures must be kept up year after year. They are, therefore, the ones in which the hot whisky is most likely to grow from a remedy into a habit and a disaster.

These cases of insomnia due to what is practically a nocturnal persistence of the hyperemia, normal enough by day, stand as a type of many more serious cases of insomnia. When the patient has cold legs and a cold skin it is easy enough to form the conclusion that he has such a cerebral hyperemia. But there are many cases of obstinate insomia due to essentially the same conditions, in which the patient's feet and skin are warm enough. These are the patients who go to bed tired but "cannot stop thinking," and we can often reach very satisfactory results by treating them on the same general plan. Our medical ancestors managed such cases by a judicious night-cap dose of Dover's powder—a gentle sudorific effect, a relaxation of the general arterial tension, a hot foot bath and a good warm body—and sleep.

Uncertain as opium is as a soporific, useless or positively contraindicated as morphia is in many cases, Dover's powder is today a most effectual soporific in such cases, and very small doses suffice. Naturally the drug should not be given habitually or carelessly, but reserved for cases in which nonmedicinal measures fail.

Before leaving the consideration of cases of insomnia due to a cerebral hyperemia, let me allude to those cases which are so often met, in which the patient is wretchedly sleepy, cannot keep himself awake as he sits in his chair, and finds to his sorrow and anger that as soon as he undresses and goes to bed sleep has fled. The explanation seems to be the same. As soon as he lies down there takes place a relative cerebral hyperemia—more blood circulates through the cerebral vessels when he lies down than when erect. The indications for treatment in these cases are the same as in the cases of cerebral hyperemia just alluded to.

We have just been considering cerebral hyperemia as a cause of insomnia, and we have already considered anemia of the brain as one of the combining causes of normal sleep. On the face of it, it seems a contradiction in terms to speak of cerebral anemia as a cause of insomnia, and yet every physician in active practice has had abundant occasion to recognize that this is a cause of insomnia and a cause exceedingly difficult to overcome. The explanation of it involves practically the question of the causation of that condition known as irritable weakness.

It was said of the celebrated field marshal, VON MOLTKE, that he could keep silent in seven different languages, and when VON MOLTKE is compared with some garrulous light-weight individual it is seen at once that the highest type of mental mechanism is that which is characterized by the most complete self-control.

When we endeavor to study into the processes by which the protoplasm of the brain cells is built up by rest and repair it is necessary to keep in mind that, in any complicated nervous mechanism, the phenomena of inhibition play an exceedingly important part. The simple forms of protoplasm respond instantly to a stimulus. The whole process is a reflex one in which there seems to be no inhibition whatever. As soon as we arrive at more complex organisms we meet the phenomena of inhibition, and the more complex the organism the more evident is the inhibitory arrangement and the more necessary. While sleep and repair ought to effect such changes in the protoplasm of the brain cells as to enable them to respond to stimuli, as they are unable to do after the exhaustion of the day's energies, yet it is equally important that the processes of sleep should increase the inhibitory control. When we are dealing with neurasthenic patients we find our most difficult problem to consist in this, that the inhibitory control is precisely that function of the brain cells which it seems most difficult to restore. These neurasthenic patients, under the influences which come during sleep, will build up the molecular structure of the brain cells so that they regain a certain explosive energy, but as soon as the protoplasm is thus enabled to respond once more to stimuli it has an unfortunate tendency to respond too promptly. The inhibitory control has not been built up, and the result is that we now have to contend with the phenomena of irritable weakness. These are the unhappy patients who are utterly wearied at bedtime, fall asleep promptly on retiring, sleep for the early portion of the night, find themselves awakened by the slightest possible stimulus, and immediately begin to waste the nervous energy which they have been enabled to gain during the two or three hours' sleep. So they pass miserable hours during the night, often get up and read, until, becoming again exhausted they secure again a fitful sleep. All told they may secure several hours' sleep during the night, but they come to the morning utterly exhausted, feeling, as they express it, worse than they did when they went to bed, the fact being that, owing to the failure of inhibition, the nerve cells have given out, in a useless energy, all the force which they succeeded in regaining during the fragmentary sleep.

Now the difficulty with the anemic patient who has experienced sleeplessness is that he is unable to build up the molecular structure of the cerebral protoplasm in any adequate way, so slight is the inhibitory control of his cerebral functions that the cells discharge themselves upon the slightest excitation. The problem in these cases is preeminently the problem of feeding the nervous elements. It is a question of giving to them enough blood and blood containing enough of all the elements necessary to the nutrition of the protoplasm. This involves, first of all, the question of supplying the cells with sufficient oxygen. Nothing can be more certain than that, not only in these cases of insomnia, but that in very many other conditions of deranged nervous nutrition the patient does not, by any means, get the quantity of oxygen which he needs. Indeed, the same thing holds true in the practice of medicine generally. There are very many patients who go about breathing just enough to keep them alive, but never by any chance taking in the quantity of oxygen that the tissues of the body require. We send our patients to the mountains and they come home full of praise of the marvelous tonic effect of the glorious mountain air. The fact of the matter is that the air of the mountains differs but little from the air of the plains, but the patient, from climbing the hills, fills his lungs abundantly and fully with air and then for the first time in his life gets into his body an entirely adequate supply of oxygen. I have repeatedly seen patients go to the mountains and come back utterly disappointed with the effects of the mountain air, and have found a very simple explanation in the fact that the patient hung a hammock across the hotel porch, and, as he never pumped an abundance of the mountain air into his lungs, he failed to get the beneficial effects of it.

The practical application of this to these cases of anemia is that we shall not only take such steps as shall improve the oxygen-carrying power of the blood and the nutritive value of the blood plasma, but that we shall take steps to procure the pumping of abundant arterial blood through the cerebral blood-vessels. In many cases I have found it an exceedingly useful plan to tell the patient to form a habit of forced breathing, carrying this out at stated intervals, say once an hour all through the day, and it is of especial value to have these patients, when they lie down to sleep, instead of counting sheep, set themselves at forced respiration as long as they stay awake. It not infrequently happens that these patients will be put to sleep by the surplus oxygen very much as if they had taken some narcotic gas. Again, for attaining the same end, the judicious use of digitalis is of much value. Personally I have learned, in these cases, to trust to the steady administration of digitalis carried to such a point as to secure a strong cardiac impulse and a reasonable tension of the arteries. It should be understood that all such means as can be used to improve the quality of the blood ought to be put into requisition.

In this connection one peculiar experience, which is liable to occur in these cases, ought to be mentioned. When an anemic patient, under the influence of such a plan of treatment as I have just outlined, begins to get a distinctly increased blood supply in his cerebral vessels he is liable, for a time, to experience a distinct sense of discomfort. The brain has the faculty of adjusting itself to almost any conceivable derangement in the blood supply, providing sufficient time is allowed for a readjustment. A sudden loss of blood or impairment of cerebral circulation will cause the profound symptoms of syncope, but, given time, a patient with the most profound general anemia will carry on his mental processes with a clearness and accuracy which seem sometimes positively startling. The most anemic consumptive patient will have a mind which is positively brilliant. If a brain which has become accustomed to a thoroughly anemic condition receives a rapidly increasing blood supply the effect upon the patient is that of a relative hyperemia. In the treatment of headaches this condition very frequently occurs, that when the physician is thoroughly well satisfied that the patient's blood is improving, when he feels gratified with the progress being made, the patient will make complaint of suffering much more than he did before. The value of noting this phenomenon lies in this, that if we are satisfied that there is an improvement in the patient's general condition, that the blood supply of the brain is becoming more nearly what it should be, we ought to go doggedly on with the treatment in spite of the fact that the patient complains more than he did before.

One thing further should be noted in regard to anemic patients. They are liable to localized hyperemias. When we consider that while the brain weighs only one-fortieth of the body weight, yet receives one-fifth of the volume of arterial blood, it is easy to understand why such a patient should have a very considerable cerebral hyperemia in spite of a general anemia.

In considering localized derangement of the circulation in the brain, one fact deserves more attention than is ordinarily given to it. So much is said of the circle of Willis as being a means for effecting a generalized blood supply to all parts of the brain that I think we are apt to lose sight of the fact that to all intents and purposes the posterior ganglia of the brain are supplied by the vertebral arteries and practically by the vertebral arteries alone, while the anterior parts of the brain depend for their blood supply with almost equal exclusiveness upon the carotids. So small are the connecting branches of the circle of Willis that when we consider the enormous volume of blood habitually circulating in the brain, the amount which passes either way through the connecting arteries seems practically insignificant. When we are dealing with patients either of the class which we now have under consideration or suffering from various other neuroses, it will, I think, help us to understand certain obscure combinations of symptoms if we remember these anatomical facts. It would be entirely possible for the posterior parts of the brain to be supplied with an abundant blood supply through the vertebrals, while the anterior parts of the brain were receiving a very scanty supply through the carotids. It is not here the place to enter on any detailed consideration of the possibilities which may result from these facts, but merely to allude to them in passing.

About twelve years ago a young man, who had been the proprietor of a lumber business, consulted me for an epilepsy of the gravest sort. He had big muscles, which were not used. Wherever he went he rode instead of walking, and he ate heartily, but on no occasion did he work hard enough to make himself perspire. His epileptic explosions were terrific and frequent. He had been drugged to saturation. I told him to go home, put on overalls, and honestly earn $1.50 a day piling lumber on his own docks, loading and unloading the boats; he was not to superintend the work but to do it. He did so. From having five convulsions a day he has not had a convulsion since November, 1890. What is the meaning of it? With his abundant food, his big muscles, his defective elimination of waste products, he set up molecular changes in his brain cells which greatly increased the readiness of the protoplasm to emit energy, and yet his life furnished him with no opportunity to normally discharge those cells; when they became surcharged there was an explosion. In his case the molecular changes were such that the explosion did not occur until the overcharge grew to be very great; the explosion was correspondingly great. In very many instances our patients suffering from insomnia are practically in an analogous condition; they eat heartily, they have big muscles, they generate much effete matter, the molecular changes in their brain cells are in the line of increased readiness to discharge, but, instead of the discharge taking the form of an epileptic convulsion the discharge keeps taking place in response to the very slightest excitation. The patient is unable to get sleep because of the incessant mental activity, often with bodily restlessness, and yet these cases of insomnia require precisely the same treatment as did my epileptic. If they can be persuaded to do what my patient had the nerve to do, go on the lumber pile and sweat real sweat, do it day after day, they will finally find that when they do a hired man's work they get a hired man's sleep.

People of this type, who are troubled with insomnia, grow very irritable. Unfortunately, in most cases, they are wealthy people—successful business men or their wives—people who are much more used to giving orders than to obeying them. All their training, their methods of life, their social habits, combine to make it exceedingly difficult to get them at work on the lumber pile.

I once was called to see a woman of this type. In her earlier days I knew her, a jolly, rosy woman. Many a time I have seen her with her sleeves rolled up busy over the washtub, the children rolling about at her feet. Unfortunately her husband grew rich. Then I saw her call a servant to close the door of the room where we sat. She possessed velvet carpets, a steel-blue coach, coachman and footman. I told the anxious husband: " I see no hope for your wife unless you could fail in business and she go back to the washtub," whereat he was offended. Yet, if we are to succeed with these cases we must forever remember the hired man and all those things about him which make his sleep so excellent. Could we have many TEDDY ROOSEVELTS, and could enough wealthy women become enamored of MR. ROOSEVELT's "strenuous life" the thing might become socially possible. Unfortunately that is a dream. Meanwhile our duty is to be strenuous at least. These people do not need drugs; they need to sweat, to " grunt and groan and bear fardels."

No treatment of insomnia is likely to be successful which does not recognize the fact that all of our nervous processes are adjusted to periods of alternating activity and repose. Sleep by night presupposes activity by day; activity by day is the prime cause of the necessity for sleep at night, and it is also the cause of the sleep. Now in many cases of insomnia it is just as necessary to thoroughly stimulate the activities of all parts of the nervous system by day as it is to secure the quiet of the nervous system at night.

In considering this question of the preparation of the patient by day for sleep by night I am inclined to think that we overlook in many cases the value of not a half-hearted but a genuine stimulation. The patient who has slept but poorly, night after night, who, brooding upon his miserable nights, wearily goes about the day's duties—if indeed he goes about them at all—falls, almost of necessity, into such a mode of life as will involve the least possible activity of body or mind. It is a perfectly natural consequence of his lack of sleep; and yet it is precisely in these cases that we can sometimes accomplish our best results by securing, either by voluntary exercise, by massage, or by the use of strong stimulant drugs, such an expenditure of nervous energy by day that when the patient comes to the time for sleep he is actually exhausted enough to fall asleep. It sometimes seems severe to make a man, already depressed, work like a hired man, but if by working like the hired man by day he can fall asleep on the spot like the hired man at night, the ultimate result is often exceedingly satisfactory.

Inasmuch as it is often difficult for our patients to arrange matters so that they shall work like the hired man, we are compelled to resort to other expedients. These are the cases in which strychnia should be administered by day, not in tentative doses but in doses which shall keep the patient up so that there is no question as to the stimulant effect of the drug. The drug should be administered in the early part of day in doses sufficient to bring about a positive stimulation, following this by sedatives in the evening. I have often found that it requires but a small dose of a sedative to turn the tired man over into sound sleep. We are too much afraid of strychnia; it is not a question of one-sixtieth or one-thirtieth grain, but enough to stimulate thoroughly.

No consideration of the causes of insomnia is complete which does not include gout. So rare are the phenomena of the old-fashioned so-called typical gout that in all my experience I can recall but three cases, and yet daily experience makes me feel that obscure gout is the cause which lies at the bottom of a very large proportion of the more serious cases of insomnia.

Gout acts to produce insomnia in a double way; it acts in a large proportion of cases slowly yet insidiously year after year, in gradually bringing about changes in the arterial walls. The more I study the question of arterial fibrosis the more I am convinced that the great underlying cause of it is slow intoxication by the poison of gout, and, when we have to deal with an insomnia due to such changes in the arterioles we have to deal with one of the most obstinate forms and one of the most intractable. Even in these cases, however, if a vigorous course of treatment be inaugurated looking toward the elimination of the gouty poison and keeping up a high degree of alkalinity of the blood, and at the same time lessening arterial tension, we can secure for the patients a very considerable degree of comfort, even if we may not have the satisfaction of bringing about any permanent cure. Gout acts also, and that very frequently, as the cause of insomnia, simply by the toxic effect of the poison upon the protoplasm of the brain elements. In these cases the possibilities of a cure are decidedly better once the cause is recognized. If the elimination of the gouty poison can be effectively and persistently continued some cases of insomnia of very long duration can be very satisfactorily managed.

I have said but little in regard to the use of drugs, and yet, while drugs are capable of damaging these patients in many and serious ways, it nevertheless remains true that wisely used they are capable of great good.

First, let us consider those cases—and they are frequent ones—in which the patient for the first time begins to experience the misery of insomnia. He falls with remarkable rapidity into another of those "vicious circles." He begins to fear that he will be unable to sleep. Trying to sleep he fastens his attention with such intensity upon the act of falling asleep that the very intensity of his attention prevents his falling asleep. If he has any prolongation of his insomnia he begins to bring about an irritable and depressed nervous condition which still further tends to influence his insomnia. The "vicious circle" has now been established. It is a matter of the greatest importance that the circle should be broken promptly. These are the cases in which the administration of a soporific in a thoroughly effectual dose, unhesitatingly but regularly night by night bring about the most satisfactory results. The essential thing is that the patient shall fall asleep within the shortest possible time after retiring for sleep. If now, for several nights in succession he can be made to go to sleep promptly and to sleep soundly all night, it very often happens that the circle is broken and the patient will now go on and sleep in a perfectly normal way without drugs. It hardly needs to be said that in the management of such a case the wise use of suggestion plays a very important part. The patient should be assured that all that he needs is to have a few nights of sound rest when his nervous system will be so well built up that his insomnia will no longer trouble him. The drug chosen should be one which will secure sleep early in the evening. For such a case as this sulphonal, which is absorbed but slowly, is a poor drug. Chloral is probably the most certainly effectual.

As a matter of practical observation I have found that in these cases after having by some surely acting soporific secured a few nights' good sleep, it is an excellent plan to give the patient some placebo as a night-cap dose for a period of several days. Once that the circle is broken such patients will find that a bulky powder of subcarbonate of bismuth will prove a most effectual sleep-producer. Any inert but bulky powder will do, but it must be combined with skillful suggestion from the physician.

In regard to the use of the bromides. Wisely used they are invaluable, and yet nothing is more certain than that their long continued use will bring about a condition of malnutrition of the cerebral protoplasm which will result in the establishment of a condition of irritable weakness, giving rise to one of the worst forms of insomnia with which we are called upon to deal.

The particular sphere for the use of the bromides, the cases in which they can be used with the greatest safety and the best results, are those of intense nervous irritability of comparatively acute and recent sort. In these cases the most efficient use of the bromides in my experience is to be found from their all-day administration in a moderate dose rather than from their administration in a large night-cap dose. In those patients whose nervous processes by day are going on in a wasteful way, the real problem is to bring about a more sedate, quiet mental activity all day long. If this can be secured, the patient comes to the time for sleep already far better prepared for sleep than if he had been wasting his nervous energy as he would do without the bromides. In other words, the bromides should be used to hold him steady all day. By doing this it very often happens that he needs no especial night-cap dose. If, however, a night-cap dose is necessary, a small dose of chloral will usually prove effectual.

No small part of our success in the management of many cases of insomnia will depend upon our success in vastly increasing the assimilation of foodstuffs. The problem is to enable the cerebral protoplasm to be so restored that the normal alternation of activity and repose and the normal inhibition of reflex activity shall be reestablished. It is fundamental that this process depends upon an adequate supply to the brain cells of proper pabulum. We must, to be sure, stop excessive nerve waste, but we must do more, we must increase the food supply. Many of these patients need forced feeding. Many of them have impaired digestion, and, if we overlook the fact that either owing to lack of appetite or to failure of digestion, even when abundant food is ingested into the stomach, the patient is badly nourished, we will entirely fail with our management of insomnia.

The class of cases in which we are most apt to make a mistake, however, is insomnia occurring in fat women. We so generally consider that a fat woman is well nourished that we overlook the fact that great obesity is very often the accompaniment of a thoroughly defective nutritive value in the blood serum. Many a fat woman with rosy cheeks is anemic and her essential active cellular elements are continuously half-starved. It seems on the face of it absurd to proceed to force abundance of food upon a woman already fat, and yet these cases will sometimes respond in a very satisfactory manner to such a method of treatment, and it need hardly be said that this will be true in the case of lean dyspeptics.

Of all foodstuffs which, in my experience, facilitate the nutrition of the nervous cellular elements, fatty foods are the most effectual, and it is singular with what regularity neurotic patients will scrupulously leave the fat upon the edge of the plate while they eat the lean. These patients need cream in abundance, butter spread thick on their bread, fat of the various meats. Cod-liver oil is of great value in these cases.

As a means of procuring sleep pure and simple without regard to future consequences my experience has led me to believe that chloral easily heads the list. It is the one drug upon which, it seems to me, we can depend as being almost certain to procure sleep, given that the dose be large enough.

In those cases of insomnia in which the prompt securing of sleep is of vital importance chloral is the drug to be used, and yet, I confess that there is no drug in the whole category of which I entertain such grave fears, with the single exception of cocain. Never under any circumstances ought chloral to be given into the hands of the laity for self-administration, and my experience makes me exceedingly reluctant to continue the use of chloral for any considerable length of time.

The safest of all soporifics is, in my experience, trional or sulphonal—both have similar effects. The trional is, I think, preferable to the sulphonal simply on the ground that it is more soluble and more readily absorbed. Here, again, I have learned to place much confidence in the plan of administering small doses of trional at intervals during the day, and a double dose at bedtime. I am personally satisfied that by giving the patient such small doses at intervals throughout the day the patient can secure satisfactory sleep by night with far less of the drug, and certainly with less of the drunken stupor which is apt to follow the administration of an overwhelming dose at bedtime.

Of opium it deserves to be said, that in overcoming the insomnia due to pain, this drug stands at the head, but that as a mere procurer of sleep it certainly, amongst our city population, is of very uncertain value. There is, however, a field in which it does prove of very great service. When we have to deal with patients in whom the insomnia accompanies high arterial tension the use of opium in combination with drugs which will relax arterial tension is very satisfactory. Our old friend, Dover's powder, is a blessed drug in these cases, far too little used since we have become habituated to thinking of morphin as the sole active principle of opium.

In the insomnia of old ladies, which is accompanied by an impaired vigor of circulation, a mixture of paregoric and aromatic spirits of ammonia, equal parts, given during the evening, will very often succeed in securing a very refreshing sleep, and in these elderly people the use of such a combination can be safely entrusted to the patient and continued according to the needs of the patient from time to time for long periods. I have had the satisfaction of making the declining years of not a few old ladies comfortable by entrusting them with this simple combination.

THE POSSIBILITY OF TRANSMISSION OF TUBERCULOSIS FROM CATTLE TO MAN.*

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AT the British Tuberculosis Congress, recently held in London, PROFESSOR KOCH read a paper in which were announced the results of his latest studies in and reflections upon the all-absorbing subject of tuberculosis. As regards the possibility of transmission of this so-called scourge of the human

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race from cattle to man, by drinking the milk and eating the flesh of tuberculous cattle, PROFESSOR KOCH's opinions as given at the congress, have caused a vast deal of surprise; indeed, judging from criticisms heard on all sides from medical men, one would infer that they came very unexpectedly from the lips of that great authority. Such surprise is natural: for if we look back to 1882, when PROFESSOR KOCH announced the discovery of the tubercle bacillus, and pass in review the changes that have come from the old ideas in regard to the causes and nature of the disease, consumption, to the doctrines now held, the picture thus mentally seen might be said to represent a slow passage from semidarkness to light.

In "Ziemssen's Cyclopedia of Medicine" tuberculosis and consumption are treated as two distinct diseases. Such terms as scrofulosis, the strumous diathesis, struma, et cetera, were common. In truth, it is not easy for those who graduated prior to the discovery of Koch's bacillus, to remember just when they changed their views from the old to the new; so gradually, almost unconsciously, has the old pathology of miliary tubercle and cheesy degenerations of the lung substance, been laid aside. Unfortunately in thus dropping the old and putting on the new, the notion once held that disease is an entity has been revived, and bacilli looked upon as the *fons et origo mali;* forgetful of the fact that those little organisms produce illness only when predisposition thereto exists.

Personally, I do not believe that tuberculosis has ever been contracted by drinking the milk or eating the flesh of tuberculous cattle, and I have had the effrontery to prepare a paper in which I have attempted briefly to show some reasons for such belief. Encouraged by the words of PROFESSOR KOCH, this paper is written in the hope that it will form a theme for this evening's discussion, wherein the two sides of the subject may be exposed and candidly examined.

If we study the origin, course, and termination of infectious diseases, their history, pathology and manner of passing from one organism to another, we find that they may be divided into two groups, distinguished by certain phenomena peculiar to each. While no strict line of demarcation can be drawn between the two groups, some forms of either class passing beyond its supposed limits, and straying, as it were, into the other's territory, nevertheless, I find that in the large majority of cases, the abovementioned grouping holds good, at the same time being convenient for my proposed view of the question. This dual grouping is conditioned by certain laws of nature in which she appears to limit the development of some infectious diseases to one class of organisms and some to others.

I will begin by stating my argument in the form of a proposition, thus:

All infectious diseases may be divided into two groups according as they are or are not communicable from the lower animals to man, and *vice versa.*

In the first group I would place the exanthemata, continued fever, typhoid and typhus fevers, relapsing fever, malarial and other fevers; perhaps cerebrospinal fever, diphtheria, and a number of other infectious diseases.

In the second group I would place syphilis, tuberculosis, anthrax, glanders, rabies, malignant edema, and other diseases.

In the first group we find a class of infectious diseases characterized by a short period of incubation, onset and termination, self-limited in their course and effects upon the organism, and in general favorably influenced or controlled by treatment. Many of these diseases by a single attack confer a certain degree of immunity upon the patient, generally permanent, which shields him from a second invasion. Again, it may be asserted that, if a very large number of persons should be attacked by any of those diseases, as in epidemics, no serious injury would be inflicted upon the race; because, under favorable treatment, the environment having been made as healthy as possible, the greater part of those affected by the disease would recover without complications. Finally, in this group of infectious diseases, nature is less stern in her restrictions; permitting rather free transmission of the disease from human beings to the lower animals, and *vice versa ;* for instance: variola is easily transferred from cattle to man and from man to cattle. The disease in its development when inoculated into the tissues of a different species or animal, becomes modified in form and generally less severe in its effects. These remarks apply more or less to measles, scarlet fever and other members of the exanthemata. The same influence is seen in typhoid and other fevers.

The diseases which make up the second group are characterized by a long period of incubation, slow onset and termination, are not self-limited in their course, for if allowed to develop without interference when once implanted in the system, their progress is from bad to worse, and the final results disastrous in the extreme to the organism. It may be asserted without contradiction, that were a large portion of the race attacked by any one of the diseases included in this class it might be wiped out. The results of treatment are not satisfactory. On the contrary, one of them, the subject of this paper, tuberculosis, has been and still is the scourge of humanity. These diseases differ also from those arranged in the first group in this respect: they are not communicable from the lower animals to man nor from man to the lower animals, as are those in the first group. Experiments have been carried on for a long time in various ways and by hosts of scientific observers, to transmit by inoculation and other methods, the virus of syphilis from man to animals with but little success. I find recorded any number of experiments made by different observers in various parts of the world to inoculate horses, cattle, sheep, goats and pigs with the virus of human syphilis, but only two or three instances in which success has been claimed; moreover, in the few cases in which some form of disease had been produced by such repeated inoculation it appeared in modified form, and less destructive in its effects. There are no known instances in which consumption of syphilitic flesh by dogs or other animals has produced the disease. It is an insult to the very nature, justice and methods of Providence to assert that syphilis can be transmitted to man from the lower animals in the meat we eat and the milk we drink. According to BAUMLER (" Ziemssen's Cyclopedia of Medicine"), but three cases are on record wherein human syphilis has been actually communicated by inoculation to animals. There are no recorded instances to show its transmission from animals to man through food or in any other way.

In regard to anthrax, GORLIER states that of four hundred persons known to have eaten meat diseased with anthrax, not one was affected by the disease. According to LAW ("American System of Medicine"), infection from eating such diseased meat, even if transferrable, may be easily prevented by cooking. Infection through milk has never been known to occur. Hence in cases wherein the disease has occurred, there must have been sores or abraded surfaces present either in the stomach or bowels, or both. PARK (" Bacteriology in Medicine and Surgery") says that the recorded instances in which anthrax has occurred in man can be traced to those engaged in laboratory experiments and to men in the habit of handling hides, hair and wool; that it has never been caused by the ingestion of food; and that even woolsorter's disease is not common. Symptomatic anthrax has never been known to occur in man ("Ziemssen's Cyclopedia of Medicine").

Glanders, and its cutaneous form, farcy, are natural diseases of horses, mules and asses. Sheep and goats are slightly susceptible, while cattle are immune. It is rarely seen in man; has only occurred in coachmen and in those engaged in the care of horses, mules and asses, and can only be caused by a bite from a diseased animal or by exposing cuts on the hands or excoriated surfaces to the poison. Cases are known wherein the disease was caused by the snorting of a horse, a drop of mucus from the animal's nose having produced the disorder. In each case, however, an abraded surface was found where the poison gained entrance. There are no known cases wherein the disease has been caused by drinking the milk or eating the flesh of glandered horses. In Russia, where large quantities of horse flesh are consumed, and still greater quantities of horse milk drunk, the disease is not mentioned as occurring among men. DECROIX consumed with impunity the flesh of horses that had been killed on account of glanders, the meat having been cooked in various ways. He even ate the raw meat of glandered horses without evil results (BOLLINGER, in " Ziemssen's Cyclopedia of Medicine"). Communication of the disease from man to man has never been known to occur. On the other hand, glanders can be easily transmitted from one animal to another among those susceptible to the disease.

Malignant cholera may be mentioned as being unknown among the lower animals. This fact is an illustration of diseases limited exclusively to man. Yellow fever never occurs in birds, and according to SANARELLI ("Park's Bacteriology") in human beings infection occurs through the respiratory and not the digestive tract; the bacillus being easily destroyed by weak solutions of acids.

The bubonic plague is a disease of human beings, although in severe epidemics, rats, mice and flies may become infected.

Malignant edema is a disease wholly confined to the domestic animals.

Rabies has never been known to occur in man or other organisms from eating the flesh of animals affected by the disease. In China, where eating dog flesh is common, no cases are reported of such infection.

I omit mention of other infectious diseases, for it is unnecessary to carry the comparison further, my object being to show that two groups of infectious diseases can be formed in the manner and under the conditions mentioned.

Turning to tuberculosis, which necessarily belongs to the second group, since it is especially slow in its incubation period, onset, course, and termination, very slightly influenced by treatment, and very disastrous in its results to the human race, it might be asked why should nature have made an exception in the case of this disease, making it communicable from the lower animals to man by the use of the milk and flesh of diseased cattle? I have read over a number of authorities whose works on bacteriology are well known (STERNBERG, LEVI & KLEMPER, HUEPPE, NEWMAN, MACFARLAND, CROOKSHANK and others), and it is noteworthy how cautious are those writers when the question touches upon the transmission of tuberculosis from animals to human beings by drinking their milk or eating their flesh when diseased. They even write hesitatingly of the possibility of typhoid bacilli found in milk causing typhoid fever. Consequently I do not now, nor have I ever, believed that any man, woman or child has contracted tuberculosis by such means. The disease is communicated from man to man, among cattle from one to another, but is not transferable from one species of animals to another.

It is to be hoped that the doctrine of the devil and his angels will sooner or later be dropped from our list of beliefs, but it looks very much as though the old belief in Beelzebub, king of disease, with his host of assistants, a devil for each disease, is being revived in the germ theory, in which each microscopic disease-causing bacillus is regarded as a veritable imp of evil; forgetting that disease is a process, not an entity, and that bacilli are not the cause of, but only contributing agencies in such morbid phenomena. No bacterial cell has individually the power or ability to produce poison enough to do serious injury to the body. It must multiply in a favorable environment and there must be both predisposing and exciting causes to make a beginning. Nor is the reverse wholly true: that there is no variety of pathogenic bacterial cell which if multiplied to its fullest capacity, will fail to produce disease; for unless both soil and environment are favorable to the microbic invader production of the necessary toxins will not take place in quantities sufficient to cause morbid phenomena.

All disease- or toxin-producing germs have a special path by which they enter the body. The bacillus of tuberculosis enters by the respiratory tract. A limited number of such bacilli will not cause disease. There must be an immense increase in numbers; the toxins must be produced in quantities sufficient to overcome all intracellular resistance, and other efforts on nature's part to destroy or neutralize the products of the life, metamorphosis and death of the bacilli, insufficient to stop the disease from advancing. As medical men, we have a serious enough task to perform in preventing the spread of tuberculosis among men, women and children, without including cattle as sources of infection. Of course, for many other reasons the proper hygiene of the lower animals is both an important and necessary duty.

I have mentioned but a few diseases of each group to illustrate my argument. I maintain that too much stress has been laid upon the uncertain idea that there must be a connection between diseased cattle and diseased humanity. A partial explanation of the general belief that tuberculosis is communicable from cattle to man lies, I fancy, in the fact that when, in 1882, Koch discovered the tubercle bacillus, the ubiquitous microbe became an organism of great importance, which has been continually increasing ever since. Of course, in the domain of surgery, where parts of the body are laid open which have never seen the light, so to speak, nor been exposed to the atmosphere with its disease-producing germs, the necessity for strict asepsis has been well attested by the splendid results of modern operative surgery. In such exposed parts microbes find ready entrance, and in a favorable soil at once begin the process of growth and toxin production. But bacilli are not guilty on all counts of the indictment; there are other disease-causing elements; although in infectious diseases it is probable that cooperation of all or nearly all factors is necessary to bring about morbid results.

The question of exterminating bacilli is an idle one. They cannot be destroyed; nor is it necessary that they should be; all that is required is to limit their reproduction or growth, an undertaking of no great difficulty; while on the other hand, there are no means of exterminating them without inflicting injury upon their host. Our aim should be to teach the contagiousness of tuberculosis from man to man by inhaling the dust sputa of those affected by the disease; separation of the sick from his friends, and selection of a good environment for the patient while under treatment. Bacteria are here and there and everywhere. Existence now-a-days is becoming very uncomfortable from the attention given to these pestiferous little growths. Almost everything we eat, drink or smoke is said to be teeming with germs of a deadly nature. Our pet dogs, cats, birds and monkeys are said to be sources for the production of man-hating microbes ever on the alert to inoculate us with some nefarious toxin. A fellow cannot kiss his best girl on account of these bacilli, nor hold her lily-white fingers in the gloaming without danger. The tuberculosis spectre stalks the earth, invisible but deadly. Rats, mice, flies, aye, the little mosquito, are now charged with the crime of spreading the germs of fevers in both town and country.

"How doth the little 'skeeter fly'
Our homes in danger bring?
It comes at night with plaintive cry,
And microbes in its sting.
It gently stabs the sleeper's face—
The little brown deceiver—
Malarial germs find there a place
To set up chills and fever.
And did'st thou kill them with thy bite,
Oh little brown deceiver?
Or did they simply die from fright
When caught by yellow fever?"

If men, women, dogs, cats, flies, and even baseball pitchers, are exposed long enough to the contagion of yellow fever, or any other infectious disease, will they not become carriers of disease germs from place to place? This fact has been known and the knowledge acted upon for ages in public hygiene. To expose mosquitoes enclosed in netting for days, to the contagion of yellow fever; compelling them to become, as it were, carriers of the disease germs, and then publishing the experiments as new discoveries, appears to me irrational and calculated to bring scientific experiments into ridicule.

The percentage of tuberculous cattle varies from ten to twenty. Considering the enormous quantity of milk annually consumed in our great cities and the immense quantities of beef, mutton, and pork used as food, it is certainly very wonderful that only one-seventh of the human race is tainted with tubercle.

Since tuberculosis belongs to the second group of diseases, I have endeavored to show by analogy that it is not transmissible from one species to another, and in consequence, cannot be communicated from animals to human beings by drinking the milk or eating the flesh of tuberculous cattle. My attempt may appear somewhat crude, perhaps strained; the distinction between the two groups may not be as sharply defined as I have drawn them, but still there may be something in the idea. On the other hand, infection can be easily spread among cattle and other domestic animals, and how easily from man to man, our annual death rate from tuberculosis only too sadly shows.

Great cities would necessarily furnish a very high percentage of tuberculosis, especially among children, if the bacilli of bovine tubercle were transmissible to man, but hospital and other statistics do not show such results. Professor Koch therefore concludes that bovine differs from human tuberculosis. Again, his statement that, to support the theory of bovine transmission to man, tuberculosis should be seen first in the intestines is important; and when he says he has seen only two cases of tuberculosis intestinalis in the Charity Hospital in Berlin; that such lesions are very rarely seen, it is time for physicians to reopen the question; for it looks as though we have been holding on to a false belief. Of nine hundred ninety-three cases of tuberculosis but ten cases of primary tubercular disease of the intestines were found. Baginsky, in all of his postmortems, never found any cases of primary intestinal tuberculosis. In three thousand one hundred four cases of tuberculosis Biedert found only sixteen of primary intestinal disease.

If it can be shown that bovine differs from human tuberculosis; if it could be demonstrated that bovine tuberculosis cannot be transmitted from cattle to man by any known methods—it has been shown by repeated experiments that human tuberculosis cannot be communicated to cattle—the fact becomes undeniable that such transmission of bovine bacilli or bovine tuberculosis from cattle to man by the use of diseased meat or infected milk is not possible. Such I believe to be the case; and I am inclined to think that a large number of physicians would declare themselves in favor of the nontransmissibility of bovine tuberculosis from cattle to human beings by any methods whatever. We are too much influenced in this and similar questions by reverence for authorities. Professor Koch has spoken in unmistakable terms, and it is our duty to reconsider the position we have taken.

STRICTURE OF THE URETHRA AND ITS TREATMENT.[*]

By A. HENRI COTÉ, M. D., Port Huron, Michigan.

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Stricture of the urethra is the lessening of the dilatability of the urethral canal, and is usually occasioned by organic changes in the mucous, submucous, or muscular tissues, but may be of congenital or traumatic origin. A fourth change is mentioned by some authors and is known as inflammatory, but this is only a temporary partial occlusion of the canal due to an acute inflammation.

Spasmodic stricture is the result of a contraction of the circular muscular tissue fibres, usually reflex, but it may be caused by fear or shame. That due to reflex causes usually arises from some irritation in the canal such as erosion or a granular urethritis.

[*] Read before the Northeastern District Medical Society of Michigan at its Port Huron meeting.

Organic stricture is an obstructive narrowing of the caliber of the urethra, and is classified as linear, annular and tortuous. The urethra is so constructed that the slightest inflammation therein is likely to assume great proportions and become chronic. This inflammation may be caused by direct violence, the introduction of instruments, or corrosive substances, the lodgment of foreign bodies from without or calculi from within, or specific urethritis, the latter being responsible for ninety-five per cent. of the cases of this disease. Whether the injury to the mucous membrane is produced by a violent blow against the perineum, a rough instrument, or the burrowing of gonococci, the membrane is denuded and the field becomes a good culture medium for bacilli. The extensive supply of blood to the organ occasioned by an erection incident to the irritation acts most conducively to increase the inflammation. These factors, together with the constant leakage of the irritating salts of the urine, bring about an inflammation of the submucous and even deeper tissues, often involving the corpus spongiosum and sometimes the conpora cavernosa. To overcome this constant absorption of urinary salts into the tissue, nature, with its usual munificence, excretes a lymph, which as a barrier to the further absorption of irritating substances, acts and gradually becomes organized. Primarily, this is a conservative action, but a continued deposit of this plastic material, which is changed into fibrous tissue, produces an obstruction to the free passage of the urine. One would suppose that this material would be easily absorbed as in other parts of the body. It does contract and cicatrize but the source of irritation is not removed. The urine being forced against this obstruction has the effect of dilating the canal immediately behind the stricture, the urethral wall is weakened and easily eroded, and while the process of contraction advances at the base of the stricture, there is a continuous upbuilding over and around it, forming a band of increasing size and density.

The location of stricture varies, but the large majority are found in the bulbo-membranous region, consisting of the distance from the prostate-membranous junction to the anterior layer of the triangular ligament. Next in frequency of affection is the anterior two and one-half inches of the urethra. The localizing especially at these points is due to the vascularity of the parts inducing a chronic condition. Traumatic stricture, however, generally occurs in the membranous urethra.

The symptoms are, first, frequency of micturition, due to the extension of the inflammation backward causing irritation of the vesical neck, and probably a cystitis, followed by atony and retention, and sometimes by reflex action caused by some erosion back of the stricture or granulations; second, a slight burning sensation coincident with the passage of urine; third, inability to thoroughly empty the urethra after urination, and the consequent dribbling; fourth, occasional attacks of vesical tenesmus; fifth, a more or less constant discharge, sometimes thin and watery, but becoming muco-purulent upon irritation, although it is not necessary that the discharge be present, as probably fifty per cent of the cases of stricture of long standing do not show this symptom, although mucous and epithelial shreds and pus corpuscles are usually found in the urine; sixth, erection is imperfect, and pain is sometimes felt during coitus, occasioned by the force of expulsion of the semen, dilating the urethra just behind the stricture and subsequently dribbling away; seventh, total obstruction, which is rare, and I have seen and operated on only three such cases.

It is not essential to have all these symptoms indicated in order to diagnose a stricture. When a muco-purulent discharge has existed for some months, or a patient gives a history of infection and experiences discomfort in the urethra, a thorough examination of the urethra is not only justified but absolutely necessary. First, Otis's bulbous sounds should be introduced, and if a stricture exists detection is easy. If there is none, an examination with the urethroscope will bring to view the cause of the discomfort, and through it may be treated the affliction intelligently.

The prognosis depends upon the stage of the stricture with its concomitant affections as attained. If the stricture is of large caliber, proper treatment will avoid serious results, but a stricture of small caliber, complicated with extensive infiltration, perineal abscess or fistula may result seriously by septic infection. The backward pressure upon the kidneys, as well as the extension of the inflammation to the bladder and kidneys, will serioully complicate the latter. The obstruction caused by a stricture is productive of hypertrophy in the vesical, urethral and cardiac muscular system.

The different methods that may be employed in the treatment are, first, gradual dilatation, internal or external urethrotomy, electrolysis, divulsion, excision, and urethrectomy.

Antiseptic irrigation of the urethra is necessary before the introduction of any instrument, and in case of urethrotomy salol should be administered, ten grains every four hours for forty-eight hours prior to the operation. Steel instruments should be boiled for fifteen to twenty minutes in water containing one per cent soda to prevent rusting and bougies immersed in a one to one-thousandth sublimate solution.

Divulsion, I mention only to condemn. It is unsafe, unscientific, and not justifiable, as the operator has no knowledge of the amount of tissue injured. Cauterization is likewise to be condemned.

A stricture occurring at the meatus or in the fossa navicularis should be divided on the floor of the urethra with a blunt-pointed tenotome. This treatment will give much quicker and more satisfactory results than dilatation as it heals in a few days. It is a point at which dilatation is not easy or permanent. A recent soft stricture of the pendulous portion readily gives to sounds, passed in increasing sizes. Often, after the passage of a sound, a few drops of blood will follow, pain is experienced upon urination, and the discharge increases. If such is the case, the operation should not be repeated until those symptoms subside, which will usually require about three or four days. During this period I usually irrigate with a permanganate solution. Greater benefit is obtained in dilating by leaving a sound *in situ* at least five minutes. The enlargement obtained does not result from the pressure; if that were the case, there would be nothing gained, but the slight inflammation excited in the stricture by the presence of the foreign body produces a resorption of the contracting fibres, with atrophy, and in time leaves a normal urethra. One should ever have in mind, during the passage of a sound, the danger of making a false passage. The mucous membrane in front of and behind the stricture is inflamed and soft, consequently, if the stream of the urine has become diverted, the wall will grow thin through atrophy, and the point of an instrument carelessly used is easily made to penetrate into the tissues. In introducing a sound, the handle should be held depressed upon the abdomen and kept at that angle until the membranous urethra is entered and then elevated. Too great care and gentleness cannot be exercised in this apparently simple operation.

Should, however, the stricture be of long standing, forming a hard, fibrous, white, contracting ring, the Thompson sound or Kallman dilator, will have little or no effect upon it. Unnecessary pain is caused the patient, time is lost, and nothing is gained. These cases require a division by the urethotome. The urethra should be thoroughly irrigated, preferably daily, for some time before the operation. Cocain will sufficiently anesthetize the parts, and after locating the stricture with a bulb sound, the urethrotome is introduced until the bulbous end has passed the stricture. The stricture is then put on the stretch by dilating the urethrotome, and by withdrawing the knife, the band is severed. If this is not sufficient, it can be ascertained by the dial on the instrument and dilated more and the operation carried a little farther. This operation is rarely attended by hemorrhage and is easily controlled by packing the foreskin with aseptic cotton, drawing the skin well forward and sealing it with adhesive plaster.

When the caliber of the stricture is too small for the admittance of the urethrotome gradual dilatation should be employed with bougies. In these cases sufficient insensibility to pain may not be obtained by the introduction of cocain into the canal as the caliber is small, and therefore the incision will necessarily need to be deeper. By injecting with a fine hypodermic needle twenty to thirty minims of a four per cent solution of cocain from the outside in the line of incision, anesthesia will be perfect. After the operation, if there is no marked febrile disturbance, the introduction of sounds should be commenced about the second or third day. It may be necessary to use cocain at this time also, as it is sometimes more painful than in making the incision. The sound should be passed every third day for three weeks, beginning with about number seventeen and gradually increasing in size. After this, longer intervals can be allowed to elapse, and once a week will be sufficient for three or four weeks, then once a month, until it is seen that complete absorption has taken place.

Narrowing of the membranous urethra should in all cases be dilated if possible. If a stricture exists that cannot be dilated sufficiently to introduce the urethrotome, then external urethrotomy must be resorted to. The patient, being anesthetized, is placed in the lithotomy position. A filiform bougie is introduced followed by a tunneled catheter staff. An incision is made in the median line of the perineum, and the knife directed so that it will strike the shoulder of the staff. Following the groove of the staff, the knife is made to cut toward the neck of the bladder, dividing the stricture with a beaked bistoury, being guided by the black guide. The staff, guided by the bougie, is now passed into the bladder. When the desired size is obtained, a director is passed into the bladder and the staff withdrawn. A gum elastic catheter may here be introduced through the penis into the bladder, and, if possible, the perineal wound closed. When there has been extravasation of urine or perineal abscess with retention of urine and atony of the bladder producing a cystitis, it is necessary to leave the wound open, that free drainage may be established. After the operation, the canal must be kept open by the frequent passage of bougies or contraction will surely follow. It is the prevailing opinion that a stricture at this point is never entirely cured. Traumatic strictures are to be treated similarly to the organic. Urethrectomy is indicated only when there is extensive fibrous induration encircling the urethra in the perineum and previous operations have been performed without effect. Electrolysis has proven most unsatisfactory in the treatment of stricture and its efficacy is questioned by such men as KEYES, TILDEN BROWN, GUYON, and DITTEL.

In conclusion, I will say that strictures of the urethra should be treated as follows: first, strictures of the meatus and navicular fossa, producing objectionable symptoms, should be divided upon the floor of the urethra; second, strictures of the pendulous urethra, that are of recent formation and soft, should be treated by gradual dilatation; if of long standing and hard, resilient and irritable, they should be cut with the urethrotome at the roof of the urethra with antiseptic precautions; third, strictures in the bulbo-membranous urethra should, whenever possible, be treated by dilatation; if this is impossible, external perineal urethrotomy should be done; fourth, external urethrotomy is necessary in all impassable strictures.

THE TECHNIQUE OF COCAIN ANESTHESIA.*

BY RALPH H. SPENCER, M. D., GRAND RAPIDS, MICHIGAN.

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ANYONE who has had occasion to look up the literature on the subject of cocain anesthesia has doubtless discovered that it is very meagre, even recent works on surgery having but little to say about it. Most of the articles that I have read have been published by pharmaceutic firms and issued in the form of leaflets and reprints. During my recent stay in New York I found that a great deal of minor surgery was being done under cocain anesthesia, and what I will have to say in this paper is taken largely from notes I made at the clinics of DOCTOR BODINE, which I attended while pursuing postgraduate study. This surgeon is an enthusiast on cocain anesthesia. I saw him do many operations, such as the removal of cystic and fatty tumors, hemorrhoids, ingrowing toenails, et cetera, and the results, so far as any evidence of pain was concerned, were certainly satisfactory. Since my return I have performed a number of small operations that were deemed necessary, but patients would not submit to general anesthesia. For instance, I have divulsed the sphincter ani for the treatment of fissure, and removed external hemorrhoids and cysts of the scalp.

When performing an operation under cocain anesthesia it will be found advantageous to employ suggestion throughout the procedure. The physician must believe that he can perform the operation without causing pain, and must gain the confidence of the patient. When the operation is completed he should have a confidential talk with the patient, and endeavor to impress on his mind that the operation was absolutely painless, otherwise he will soon be telling his friends that it hurt him exceedingly. Suggestion and system, while operating under cocain anesthesia, are absolutely necessary.

A convenient formula by which to make a one per cent solution for injection, is to dissolve a cocain tablet, containing one and three-sixteenths grains in one hundred and twenty minims of water. (A firm at Saratoga Springs manufactures a tablet of this weight.) The solution should be rendered alkalin by dissolving a teaspoonful of bicarbonate of soda in one pint of sterile water. The injection must be made while the solution is fresh—not over four hours old—or sloughing may result. The solution must not be boiled, as this kills the life of the cocain; but it must always be alkalin and warm when administered. Sterilization is effected by boiling the water in a test-tube, and just as soon as it ceases to boil the tablet should be inserted. This will sterilize and not spoil the cocain.

The skin may be anesthetized by employing a solution ranging in strength from one-half to one per cent. A very fine needle should be used for the injection, and the flesh should not be penetrated deeply.

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* Read before the GRAND RAPIDS ACADEMY OF MEDICINE, October 21, 1901.

One must be able to see the point of the needle during the entire procedure. For the deeper tissue one-fourth to one-sixteenth per cent solution may be employed, but the parts must be thoroughly saturated with it. To obtain this condition a stock solution of one per cent should first be prepared, and then the sterile soda solution. A syringe with a graduated barrel should be used for the injection. The required amount of cocain solution should be drawn in, and then enough of the soda solution to ensure the desired strength. The injection should always be made slowly. Quite an operation can be done with one-fifth of a grain, but one is perfectly safe, however, in injecting as high as two-thirds of a grain if it is considered necessary.

The antidote for cocain is morphin. Prior to beginning an operation of any magnitude, one-fouth of a grain of morphin should be injected before producing cocain anesthesia. This prevents poisoning and gives the patient a sort of "Dutch courage." Cocain is likewise the antidote for opium poisoning, the dose being a half grain given hypodermically, followed in half an hour by one-fourth grain, and later one-eighth grain if necessary. This antidote will save most of the patients. No other treatment will be required.

A patient may become faint while under the influence of cocain anesthesia, but while the pupil remains normal no danger need be feared. The first indication of toxic effect is dilatation of the pupil. If this is noticed morphin should be injected.

When cocain is employed to produce anesthesia in the nose, that organ should first be sprayed with an alkalin solution, as the secretions of the nose are always acid, and cocain is inert in an acid medium, or when cold.

Amputations, hematomata, hemorrhoids, laparotomies, et cetera, can be performed, under cocain anesthesia, without a particle of pain, by sponging and catching vessels most likely to hurt. Weak solutions anesthetize more completely than strong ones, for the reason that the tissues can be more thoroughly saturated with them. When operating on parts like fingers, toes, et cetera, it is well to throw a rubber band around the member, to partially control circulation.

PRACTICAL THOUGHTS ON DISEASES OF THE HEART.*

By JAMES C. WILSON, M. D., FLINT, MICHIGAN.

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AN experience of over forty years in the practice of medicine has demonstrated that the heart is often the seat of disease, by infection, which early recognition and proper management might avert; but, unfortunately, either the patient is not examined when the first symptoms of a cardiac ailment are present, or it is not possible to render the treatment necessary to arrest the progress of the condition and restore the patient to perfect health.

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* Read before the NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN at its Port Huron meeting.

In an acute attack of endocarditis, myocarditis, or pericarditis, caused by infectious poisons, especially those of rheumatism and la grippe, a correct diagnosis usually is not difficult to make, although some of the symptoms may at first be obscure and misleading; but by careful inquiry into the previous history of the patient, his predisposition through heredity, mode of attack, physical and clinical symptoms, such as oppressions in the chest, especially in the precordial region, the irregularity of the heart's action, Cheyne–Stokes breathing, syncope, dizziness, and particularly by the reasoning process of exclusion, a direct diagnosis may be made. If murmurs, regurgitation, hypertrophy, pain and oppressed breathing on the slightest exertion, added to the foregoing symptoms, are indicated, the heart is certainly the diseased organ. It may be an endocarditis, a myocarditis, a valvulitis, or a pericarditis, or two or more of these diseases combined, with stenosis or arteriosclerosis of the blood-vessels supplying and nourishing the heart; or possibly fatty degeneration of the muscle may be present, as this last often causes many of the symptoms previously enumerated.

Riegel says the irregularity of the heart's action—the total loss of rhythm—is the characteristic feature of myocarditis, and is pathognomonic. Contrary to this, Doctors Loomis, Quimby, and others, say there is no single symptom which can be relied upon as a sure indication of myocarditis. The diagnosis must be negative rather than positive. Absence of the distinct evidences of valvular disease, with loss of rhythmical action, is regarded by most diagnosticians as a positive indication of diseases of the heart, or myocarditis.

Doctor Lemoine, in the *Nord. Med.* of May 6, 1897, makes a distinction in diagnosis, which I think of great practical value in the prognosis of cases in which the morbid element is the muscular fibre, from the interstitial myocarditis, which is a part of the general arteriosclerotic process, in cases evincing the vascular change.

Among the influences mentioned by authors favoring the development of arteriosclerosis and chronic myocarditis are heredity, and in the male sex of advanced life—over forty years—chronic alcoholism, syphilis, gout, lead poisoning, chronic nephritis. severe muscular labor, and excessive mental exertion and anxiety. The chronic process is a result of the malnutrition of the myocardium. The causes of cardiac degeneration include all the causes of defective nutrition, either local or general; for example: (1) interference with the coronary circulation; (2) deficient or abnormal elements in the blood. Among the most prominent of these last is chronic Bright's disease of the kidneys.

Whatever be the ultimate analysis and diagnosis in any particular case, there is sure to be a very serious condition or series of conditions, the intelligent or nonintelligent treatment of which may mean life or death to the patient. In the selection of remedies, general management and treatment one will necessarily be governed by many factors.

First, and most important in all cases that I have observed involving either the valves, muscle, coverings, or blood-vessels, is rest and quiet, both physically and mentally. The patient's activities should be carefully limited, and blood-letting should be performed in cases of perilous engorgement of the heart from any cause. I have never resorted to it, although twice, in my own individual case, I would have been glad to have had bleeding performed could a physician have been easily summoned. Authors recommend it, and a fellow-practician in Flint, DOCTOR BARDWELL, has informed me of a patient whose life, he believes, has several times been saved by taking a pint of blood from the man's arm on different occasions. The patient invariably expresses the greatest relief after the operation. The attacks experienced in my individual case were the result of overexertion after eating, and the smoking of a stronger cigar than usual. The feeling was that of suffocation, great oppression about the heart, as though it was enlarged and swollen to twice the ordinary size, and would rupture if relief was not soon afforded. The pulse, as I felt it, was scarely perceptible, and gave a sense of emptiness of the artery. In both of my attacks relief came from free emesis. On many occasions during the last eight years, since I first had admonition of a weak heart, when, forgetful of my weakness, I have taken a little more active exercise than was prudent, especially after eating, these spells affected me: from walking a little faster than usual, or ascending the stairway to the office, or, as when, on Saturday of last week, my driving horse became frightened and tried to run away, the little extra exertion caused an attack that is invariably relieved by emesis which ensues without the aid of medication.

It is of the utmost importance to keep the bowels regular and the portal circulation free in all cases of heart disease, and for this purpose may be given a one-grain tablet of calomel, three grains of bicarbonate of soda, and one-sixteenth of a grain of ipecac at night, followed by one dram of sulphate of magnesia in a goblet of water in the morning. I emphasize the importance and real therapeutic value of sulphate of magnesia as a laxative or cathartic in all infectious diseases. There is no substitute equal to it that I know of in the materia medica.

Next in importance in the management of cases of heart disease is the dietary of the patient. This should be, during an acute attack, very simple, such as milk—good, rich Jersey milk, that has not been robbed of its cream. In my own case, so important do I regard good digestion in preventing attacks of heart disturbance, that I seldom omit taking from fifteen to twenty-five drops of dilute nitromuriatic acid in one-third to one-half of a glass of water, to which have been added a teaspoonful of the essence of pepsin or powdered lactopepsin, either before or after meals, three times a day, or even more frequently. I have used this continuously for eight years or more, since an attack of la grippe, from the infection of which I first experienced disease of the heart. No bad effects have yet been felt from its use. On the contrary, I credit to the treatment much benefit to my general health, assisting other remedies in eradicating a rheumatic diathesis, and thereby relieving and arresting progressive degeneration of the heart muscle. My experience in the treatment and management of other cases as well as my own, confirms the belief in the mutual interdependence of healthy action between the stomach and heart, without the establishment of which failure must inevitably result. To accomplish this, I always insist on the warm alkaline baths where conveniences can be had for giving them. Here, again, for the purpose of illustration, I may detail my method of preparing and using them for myself. Nitrate of potash is purchased in quantities of fifteen to twenty pounds, and kept in the bathroom. Two or three pounds of the salt is added to a sufficient amount of water, from 99° to 100° Fahrenheit, to cover the body when prone. I bathe in this solution from ten to fifteen minutes, washing and rubbing the body and limbs with a coarse towel, using a quick motion to excite circulation. This rubbing is continued after leaving the bath, and I also indulge in some light form of calisthenics, to limber the muscles of the body and internal viscera, from which, I think, the heart derives the greatest benefit. The water in the bath is of a higher temperature than the blood in order to favor absorption into the blood-vessels through endosmosis. The baths are always attended by a grateful feeling, and the uniform testimony of other patients, to whom I recommended them, agrees with my own, that the baths alleviate the disease. For those who cannot go to Germany, to indulge in the luxury of the Nauheim baths superintended by SCHOTT, these just described serve quite well. I have not repeated them oftener than once a week.

I am indebted to that eminent specialist in diseases of the heart, PROFESSOR ALONZO CLARK, of the College of Physicians and Surgeons of New York city, for another favorite prescription used in this class of cases. It was my very great privilege to attend his clinics and listen to his talks and lectures during the winter of 1869 and 1870, and he uniformly concluded his lectures with, "Gentlemen, in this case you know the prescription, as in all others—never fail to combine with your own treatment and remedies, iodide of potash." Familiarity with its use for more than thirty years has convinced me of the soundness of his judgment in this particular. If has proved especially potent and beneficial in those cases of children and young persons, with chorea and partial paralysis, as a concomitant in heart affectations. In cases of heart disease, following scarlet fever and diphtheria, in which is always found involvement of the kidneys, it is a *sine quo non* in the treatment.

I wish also to mention the good effects obtained with the use of diuretin in this class of cases, attended by scanty secretion of the urine and edema, accompanying heart disease. It has never failed in my experience, when first given, to increase the secretion and relieve the heart symptoms by its compensating action on the kidneys. But, like all other remedies, when long continued it loses its therapeutic value.

In the treatment of chronic myocarditis, arteriosclerosis, or affections of the valves, the endocardium or pericardium, the use of cardiac stimulants and tonics are necessary according to the requirements of each case. Digitalis, quinin, nitroglycerin, salicylic acid, strychnia, and morphia, with strophanthus and sulphate of spartein have their uses, and will be chosen to meet indications as they arise.

While this paper is not intended to be a treatise on the diseases of the heart and the treatment thereof, I trust that, nevertheless, it will emphasize the importance of a careful study of the diseases of that organ which seem, from the startling frequency with which the daily metropolitan newspapers announce deaths from this cause, to be rapidly on the increase. It is the duty of the physician to ascertain the cause or causes, if possible, and supply the remedy. In this, as in many other diseases, an ounce of prevention may prove to be worth more than a pound of cure.

In closing, I may call your attention to some recent literature on this subject, that will not only repay a perusal but a careful study by those wishing to enlarge their scope of knowledge in this important branch of medicine.

In "Sajou's Annual and Analytical Cyclopedia," Volume II, page 252, under the heading "Chorea—Etiology and Pathology," will be found an interesting and instructive analysis of the relation of rheumatism and cardiac lesions to chorea. Also in Volume V, page 79, one on "Myocarditis," and in the same volume, page 413, one on "Diseases of the Pericardium."

In *The Journal of the American Medical Association* for October 15, 1898, will be found a most interesting and instructive article, by DOCTOR CHARLES LYMAN GREENE, on the "Treatment of Heart Disease by Saline Baths and Resisted Movements, the Schott method." This has special reference to the curative effects of the Nauheim mineral waters of Nauheim, Germany. I notice that the highest temperature of the water recommended and used there for baths is 93° Fahrenheit, which is gradually lowered after six baths have been taken. In the same journal for January 12, 1901, may also be found a report of three excellent and instructive papers, read before the section on practical medicine, at the meeting of the American Medical Association, held at Atlantic City, New Jersey, in June, 1900; one by PROFESSOR COHEN, of Philadelphia, on "The Relative Importance of Valvular and Muscular Lesions in Diseases of the Heart;" another by DOCTOR LOUIS F. BISHOP, of New York City, on "A Clinical Study of Myocarditis;" and a third by DOCTOR J. J. MORRISEY, of New York City, entitled "A Plea for a More Rational Prognosis in Cardiac Affection." Also, in that journal for March 16, 1901, page 770, under the headings "Myocarditis," "Chronic Myocarditis," and "Prognosis of Chronic Myocarditis," there are valuable suggestions. In the same journal, for January 5, 1901, page 14, is an article by PROFESSOR N. F. JUNIOR, of Chicago, on "Malignant Endocarditis, with Recovery." This paper was also read before the section in practical medicine, at the meeting at Atlantic City, and called forth a very interesting discussion by specialists present. It will repay a careful perusal. Another article, in the reading of which I was very much interested and instructed, is that by DOCTOR F. W. FORBES ROSE, also reported in that journal for November 3, 1900, page 1183. It is on "The Medical and Dietetic Treatment of Heart Failure." His experience coincides with my own, in advising that only a small quantity of food be taken into the stomach at a time.

Those who wish to study the Schott Brothers' method of giving baths, the compositions of the waters, and the resisting muscular treatment of chronic heart disease, should read DOCTOR ELSWORTH SMITH's article in the journal referred to of January 28, 1898.

From the foregoing references we may infer that the profession is not indifferent to the importance of these diseases, and that they are receiving that careful study and investigation which their gravity demands.

TRANSACTIONS.

NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN.

STATED MEETING, PORT HURON, JULY 25, 1901.

THE PRESIDENT, PHILLIP A. KNIGHT, M. D., IN THE CHAIR.
REPORTED BY A. HENRI COTÉ, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR A. HENRI COTÉ read a paper entitled "Stricture of the Urethra and its Treatment." (See page 456).

DOCTOR NEY: I am very glad indeed to observe an effort being made toward placing the treatment of diseases of the urethra upon a higher plane. We have all seen disaster follow these cases; a young, innocent woman, goes away on a bridal tour and comes back to enter the hospital. I think such a paper as the one just read is very timely. In regard to the treatment advised by the author, I think I would concur in every particular, with the possible exception of electrolysis. He condemns it. I am inclined to think that in certain cases it possesses merit, and, consequently, have nothing to say against it, as I recall some very gratifying results from its employment. In regard to external urethrotomy, I will say that it is all very well to talk about a bougie and cutting down upon the sound, but sometimes it cannot be done; the urethra will be lost. Of course the urethra can be caught up with two forceps and the bougie again inserted, when possible, but frequently this will be found impracticable. The canal is lost in spite of all one can do. There may be no canal, but usually, by grasping the mucous membrane as closely as possible with two forceps and cutting as far as possible, and then grasping it again, the canal may be followed. If a hemorrhage occurs, progress should be made slowly. The more haste the less speed. By following it up, step by step, the point is eventually reached where a rush of urine occurs.

DOCTOR GREY: There is one point that I would like to mention, and that is the necessity of teaching the patient to use the sound on himself after he is discharged by the physician. It has been my experience that oftentimes the patient and the practician are disappointed unless this instruction is imparted. The patient should practice dilatation quite thoroughly upon himself once a week as long as he lives. I really believe this is the only way to make sure of a permanent cure of any stricture in the tract of the urethra.

DOCTOR FLAGLER: I would like to ask DOCTOR COTÉ if he thinks it possible to effect a permanent cure in a much aggravated case of posterior stricture? (See answer in DOCTOR COTÉ's conclusion).

DOCTOR PLATT: In regard to DOCTOR COTÉ's remarks concerning divulsion, I think there are cases in which this procedure is proper. I recently treated a patient for spasmodic stricture, which was severe. The man had been manipulated for a long time by the inserting of sounds until finally a false passage had been made and organic stricture instituted. In this instance it was necessary to perform external urethrotomy. The result was all that could be expected, but the patient was afterward subject to spasmodic stricture. I tried various methods to keep the urethra open, and, finally, DOCTOR SMITH and I operated by extrenæ divulsion. An Otis urethrotome was used, and the dial passed up to number forty-five, when all resistance was overcome. There was not a fibre that could contract. The result is that the man is recovering his flesh and feeling as well as he ever did. I do not think any means other than divulsion would have cured that man. He is a person who is subject to spasms of every muscle of his body. Since the operation the urine is clear, and he can go all night without urinating, whereas before it was necessary to urinate every ten or fifteen minutes.

DOCTOR COTÉ: I thank you for your discussion of my paper, especially for your criticism, because the better steel is tempered the stronger it becomes. In answer to the question of DOCTOR FLAGLER, I think I stated that a stricture of the bulbous and membranous urethra is never cured. The patient can be relieved, but not completely cured. In the pendulous urethra I think the stricture can be cured. I have recently examined a number of cases with the urethroscope, upon whom I had operated five or six years ago, and I could find no trace whatever of stricture. DOCTOR NEY says that sometimes it is difficult to introduce a bougie, and sometimes it is impossible. Often the sound will enter a false passage, but by leaving it *in situ* and introducing another you will probably locate the real passage. The second bougie may stick in the false passage, but if so, continue to introduce other bougies beside it until the canal is found. DOCTOR NEY also says that sometimes it is impossible to reach the real passage, but it seems to me that with the knife a way can usually be cut through. DOCTOR PLATT brought up the question of divulsion. He cites only one case in which he tried it. He may have been fortunate in not getting serious results with that case, and, even as it is, he does not know how much injury was done to the urethra. A spasmodic stricture is simply a contraction of the circular fibres, and why is it not as scientific to sever these fibres with a urethrotome, or a knife, if an external urethrotomy must be made, as to use divulsion? In divulsion live membranes are also torn in front and behind the stricture, and one does not know how deep the tear in the tissues may be, or how much injury may result.

CORRESPONDENCE.

SURGERY IN PLYMOUTH AND BATH, ENGLAND.

EDITOR OF The Physician and Surgeon: Plymouth is the old city from which the pilgrims sailed in the Mayflower in 1620. A large stone tablet in the pier, and a small one of bronze near by, tell the story of the people who left this spot many years ago, and established a home for liberty and conscience in America. It was here the last leave-taking and the last advice from the doctors were received; and the last medical stores for the eventful voyage were taken on board. It was a great seaport then; it is a greater one now. With the contiguous ports of Devon and Cornwall, about Plymouth sound, there are upward of two hundred and fifty thousand people, the majority of whom gain their living by the sea.

Splendid hospitals are numerous. They are equipped with all the latest devices for the application of electricity in the treatment of disease. This whole southwest coast of England is a health resort, and Plymouth, as the metropolis of the region, gets most of the patients who are seriously ill. At the Royal Hospital of Devon and Cornwall there are one hundred and fifty beds, filled with patients from every quarter of England and the colonies. They are about equally divided between medical and surgical cases.

During the hours set apart yesterday for surgical treatment in the theatre four operations were performed—two for varicocele, one for hernia, and one for appendicitis. The doctor in charge of the hospital told me that it (appendicitis) was an American disease, and since so many descendants of the Pilgrim Fathers began, a few years ago, making pilgrimages to Plymouth, there had been a good many cases of the disease. Further conversation developed the fact that it had only lately been discovered by Plymouth surgeons. This patient had had four attacks of active inflammation of the appendix during the last five years. The operation was performed about as we do it in America, but the stump of the appendix was cauterized with electric cautery, the current being brought in from the street and reduced by a transformer. In all the preparations leading up to and after the operation the same steps are followed that we practice.

The operation for radical cure for hernia consisted in simply removing the sac after tying it off and then closing the wound carefully with interrupted sutures. No particular attempt was made to close the internal ring further than to destroy the peritoneal pouch projecting through it by the complete removal of the sac. I was told that in that hospital they got just as good results by that method as others got by the Bassini and other complicated operations.

The two cases of varicocele were in young men who had been rejected from service in South Africa on account of the enlarged veins of the spermatic cord. They were both operated upon as a condition for reexamination for admission to the army. Neither had a very large varicocele. Both men's cords were cut and about an inch of each was removed, on the affected side, and the stumps tied together with the ligatures that were applied carefully about everything in the cord except the vas deferens before the section was removed. The wound was made over the external abdominal ring, and the varicose veins and cord were removed close to the ring. They say there are very few relapses after this operation, and atrophy of the testicle as consequence of removal of an inch of the spermatic cord minus its vas, has not been observed.

At Bath, the old Roman bathing establishment, after visiting the antiquities, I visited the Royal United Hospital, and was at once shown two more cases of the American disease—appendicitis. One was suppurating freely, had very nearly died before consent to operation could be obtained. The other case was operated upon between the attacks of active inflammation and was healing without pus. Bath is to England and Europe what Hot Springs, Arkansas, is to the United States. It is an old city and has its renown as a health resort from Roman times to the present. Every time any great excavating is done about the town Roman baths are exhumed. Some of them are fine specimens of Roman construction and indicate a superb knowledge of plumbing and hydraulic art.

The hospitals here contain more surgical than medical cases. One would think that the gouty and rheumatic people who patronize the baths would fill the hospital. They go to the "nursing homes," where they get the massage, et cetera, so useful in those diseases. "Nursing homes," in England, is a name given to a private hospital or sanitarium. In Bath they are well patronized, and contain both medical and surgical cases. They are for pay patients. The hospitals are for charity patients—people who are servants and dependents of employers.

The charity hospitals are generally built and maintained by voluntary contributions. The billboards announcing the names of the voluntary contributors, with amounts, to the Royal United Hospital in Bath, occupy all the wall space in the great entrance hall of the institution. If a sick or wounded man wants to get in he must get a permit from the voluntary contributors showing that he is poor. The doctors who are in charge of the patients get no pay. Monuments and tablets to the memory of physicians who have labored in the city are quite numerous. Their fine houses and high standing indicate that the people of Bath have long held a high opinion of their medical men.

HAL C. WYMAN, M. D.

LONDON, ENGLAND, October 20, 1901.

EDITORIAL ARTICLES.

DETROIT CLINICAL LABORATORY.

IT will be good news to many a doctor, within a fair radius of Detroit, to learn that a scientific and complete clinical laboratory, at the services of the profession, is being set up in that city. The idea of such an establishment in connection with the Detroit College of Medicine was first discussed about two years ago, but after some consideration abandoned, in the hope that, by engaging the profession at large in its management, its benefits and influence would thereby be greatly increased.

A movement to that effect was actively set on foot several months ago and interested persons visited such laboratories in other cities in its interest. It was at first expected that the assistance of a few charitably-inclined nonprofessional men would be required, but in this the promoters of the enterprise were gladly disappointed. A subscription list was passed around among the physicians generally, irrespective of college relationships, cliques, or pathies, and so enthusiastically was the stock bid in that an organization was soon effected and incorporated under the laws of Michigan.

The Board of Directors consist of Charles G. Jennings, M. D., President; William F. Metcalf, M. D., Vicepresident; Wadsworth Warren, M.

D., Secretary-Treasurer; and Doctors Oscar LeSeure, Frederick W. Mann, Arthur D. Holmes and Ernest T. Tappey. The Laboratory Staff appointed is: Thaddeus Walker, M. D., Superintendent of the Laboratory and Chief of the Department of Hematology and Clinical Analysis; Heneage Gibbes, M. D., Chief of the Department of Pathology and Photography; Joseph Sill, M. D., Chief of the Department of Bacteriology; Frank T. F. Stephenson, M. D., Chief of the Department of Chemistry; and Preston M. Hickey, M. D., Chief of the X-Ray Department.

Under the management of these well-known physicians, experts in their several lines, scientific and faithful service in making accurate diagnoses in doubtful cases will be possible to all reputable physicians in Detroit and vicinity to an extent never realized before. It is not to be supposed for a moment that Detroit physicians have not kept abreast of medical progress hitherto, even in the use of technical laboratory aids, but the advantages of a complete laboratory outfit was not to be had.

The directors of the Detroit Clinical Laboratory are already engaged in purchasing the necessary equipment, which will be temporarily installed at 33 Mullet street. It is hoped, however, at some date in the near future, to have the laboratory located in its own building.

In addition to the ordinary purposes of such a laboratory, it is designed to afford postgraduate instruction in the several departments of the work; to provide patrons facilities for original research; to supply laboratory materials for use outside of the laboratory, and to prepare and maintain, for the use of patrons, a collection of macroscopic and microscopic specimens,—histologic, pathologic and bacteriologic.

The Physician and Surgeon takes great pleasure in thus announcing this important undertaking at its inception. Its success seems so assured, and its good graces so pronounced, that the cooperation of the local profession cannot be wanting. Now that a fair beginning has been made in this direction, it is to be hoped that some of the philanthropy, which now-a-days goes begging, shall be diverted into more needy and more truly benevolent channels.

ANNOTATIONS.

A SAD MISTAKE.

TWELVE deaths from tetanus have been recently reported in Saint Louis, Missouri, following the use of antitoxin for diphtheria. The serum was manufactured under the auspices of the board of health. The horse, from which the serum was obtained, was taken sick with a disease diagnosed by the city veterinary surgeon as incurable tetanus, and killed. It is stated also that a guinea pig succumbed to treatment with the same remedy. Twenty human inoculations are said to have been made before the real nature of the serum became known. The consternation felt can be better imagined than described. The straightforward statement of the city bacteriologist as to the treatment of the horse, and the method according to which the serum was manufactured, is likely to disarm criticism somewhat, although nothing can remedy the sad mistake. As tetanus had already five or six times developed in connection with the animals used by the board, no excuse would be received for not having taken extra precautions. This calamity should hardly be cited as sufficient reason why municipal authorities should not engage in the manufacture of serum or any other drug commodity, and yet it is easily a disputable question as to whether they should. Surely there could be no necessity for it, and in view of the political influences there are good reasons why they should not.

THE UNHYGIENIC MATTRESS.

Credit should be given to **Habermaas** for calling attention to the mattress as an unhygienic article in the sick-room. Being accustomed to consider it indispensable to a comfortable bed we had, perhaps, overlooked its unhygienic qualities. It is a fact, nevertheless, that it is a most unhygienic piece of furniture, and especially so when used by different individuals. If permissible anywhere it may be in one's own bed chamber, but never in a hospital, sleeping-car, hotel, or any other public place. Incapable of cleansing, the wonder is that a substitute, or at least an improvement, had not been suggested sooner.

CONTEMPORARY.

COMMERCIALISM IN MEDICINE.

[THE MEDICAL NEWS.]

It has recently been said that, while law has become a business and other professional callings are moving in the same direction, the medical profession has during the past fifty years steadily grown away from commercialism. By this statement we are to understand, not that the physicians of today have retrograded in sound business policy, but that the ascendency of what is known as "sharp practice" in the commercial world over the professional duties which form the keynote of medical practice has been avoided.

Assuming that this statement is correct, and as applied to the profession in its entirety it undoubtedly is, there would seem to be implied a libel on the motives of those members of the profession who have gone before, placing them in a less favorable light than the facts warrant. In the last analysis, however, it will be seen that this implication is more apparent than real. If there is any reason why the physicians of today are less commercial than those of a half-century ago, it is because of the tremendously increased knowledge in the medical science which has more and more drawn their attention from things financial to scientific considerations, so that those who would be sure of ultimate success have had less opportunity to commercialize themselves than did their predecessors. It will be seen, therefore, that the primary object in drawing away from commercialism has been partially one of self-advancement rather than wholly one of philanthropic generosity. This statement is no slur on the medical profession of today, for it is a historic fact that the spirit which has very largely actuated scientific leaders in all ages has in the vast majority of cases been this same indomitable desire for individual success.

In regard to the profession of medicine, it has somewhat been the practice in the past, and the same unfortunately prevails in some quarters at the present, to ascribe a very considerable degree of success to that fortunate combination of circumstances known as "good luck," when added to the characteristics of a pleasing personality, the reputation of always being a busy man, and sharp business methods. While in years gone by these possessions may have contributed in a fair degree to personal advancement, the keen-sighted observer, thoroughly conversant with existing conditions, cannot fail to observe that the value of these qualifications has been steadily relegated to the rear, and that accurate and scientific knowledge along all lines of the allied medical sciences has been the chief factor of success with the preeminent medical men of today, and must increase in importance for those who are to attain success in the future.

We do not intend to depreciate the value of sound business methods as applied to one's professional career, but to hold that those who are to stand in the front ranks of the future must be essentially physicians in all the name implies, and be further removed from what may be known as commercialism than those who have preceded. It is to be remembered that this conception does not prevent one from utilizing all the known legitimate means for making a livelihood which are open to the medical profession, and that such may be used with impunity in so far as they do not conflict with the main object in view, nor seriously interfere with a steady progress toward the ultimate goal, but the danger that such means should become to be regarded as the main factors of success must be constantly averted.

It is to be admitted that in certain sections, especially in large cities, there has been evidenced, particularly during the past ten or fifteen years, a tendency on the part of a very limited number of the profession toward commercialism, thus, by their methods, placing themselves on a level with those pursuing ordinary avocations. It should be remembered that by so doing they have virtually withdrawn from the profession and entered into a business on a business basis, submitting themselves to the ordinary laws of commercial pursuits. Observation will show that whatever financial success may have attended their course, even this is short-lived from the very fact that the goods which they purport to sell are not marketable in a commercial sense beyond a very limited field. That this evil will always exist is to be expected, but that it will ever become a factor sufficient to degrade the profession in its entirety cannot be comprehended, for the vast majority of those who enter medical practice will always be keen enough to see that genuine success does not lie along these lines, and that satisfactory prosperity in the medical profession is incompatible with commercialism in any form.

MEDICAL NEWS.

A BANQUET AND PRESENTATION.

Doctor Nathan S. Davis, Sr., was tendered a testimonial banquet at the Auditorium Hotel, Chicago, October 5, 1901, by three hundred of his confreres resident in Chicago and elsewhere. The occasion afforded an opportunity to express the high esteem in which the venerable physician is held by the medical guild, and this was admirably realized in the presentation of a beautiful loving cup of Grecian design, by Doctor Edward F. Wells, who, in the course of his remarks, said:

* * * "Few possess the creative genius necessary to initiate great forward movements in public affairs, and fewer yet are permitted to see the realization of their lofty conceptions. But you, sir, are singularly fortunate in both these respects; and now, after these many years, you may stand before the bow of promise, supported, as it is, upon one side by the fathers of medicine, resting upon the adamantine foundation of experience and truth, and upon the other by the moderns, standing upon the broad expanse of experiment and fact, and, looking through, view with satisfaction the fair and boundless plains of the future as they stretch out beyond." * * *

Doctor Davis, in receiving the cup, spoke feelingly, deliberately, and at length, the following being extracts from his remarks:

* * * "At the age of seven years, as a boy who had never been outside of his father's farm, born in a log house, and when still in a log house, I was called to the bedside of my dying mother to receive her last words. I was the youngest of a family of seven children; I was in my seventh year. It made a vivid impression upon my mind. She was a Christian—a reader of the Bible. She said to me that she wished me to be a good boy, to learn to worship God, and to do good to my fellow-men. I promised her I would. Of course, I did not realize the importance or bearing of that promise at that early period of life, but an impression was made upon my mind; and from that day to this the rule of my life has been that whatever comes up that seems to be important, and will improve my fellow-men, my impulse is to do what I can to help it along. [Applause.] That is the whole foundation of it. I refused to undertake anything the results of which would not be beneficial to those around me, whatever it might be. The question was, Would it benefit my fellow-men? If it would, I supported it. I refused, on the other hand, to lay up enmity against

any human being, and today I stand here and say that I know of no man or woman for whom I have an evil wish, and there is not one to whom I would not extend a helping hand at any moment if they were within my reach and needed it." [Applause.] * * * "I am sometime lonesome because I so rarely meet my early comrades—lonesome because they are gone. But I am going to join them before long. I do not expect to tarry a great while. But I have no care about that. I live so that I am ready each day to go. I have no settlements to make; I have no great fortune to give away; I have got enough for my comforts, enough to clothe and feed me as long as I live. That is all I want. I would not die worth a hundred millions of dollars; I should be afraid I had not done my duty."

Upon one side of the cup there was engraved an excellent likeness of Doctor Davis, upon another side the leaf of victory, beneath which appeared the inscription, "*Palman que meruit ferat*"—Let him who has won it bear the palm, and beneath this the words, "Pioneer in local and national medical organizations, and in graded medical instruction;" and upon the other side appears this tribute: "Presented to Nathan Smith Davis, A. M., M. D., LL. D., in recognition of his long and distinguished services to medicine, in its every field of usefulness, by the members of that profession which he has so conspicuously adorned, and to whose shield he has given an added lustre."

Doctor Frank Billings was the toastmaster of the evening, and Doctors Charles A. L. Reed, Donald Maclean, Victor C. Vaughan, Hobart A. Hare, Edwin S. Ricketts, and Robert H. Babcock made postprandial speeches, after which the festivities were concluded by the singing of "Auld Lang Syne."

CORNER-STONE CEREMONIES.

THE laying of the corner-stone of the new medical building at the University of Michigan, was observed Tuesday, October 16, 1901. John A. McCorkle, M. D., of Brooklyn, New York, an alumnus, class of 1873, delivered the opening address before the Students' Medical Society and invited guests, in the medical amphitheatre. The open-air ceremonies were prefaced by an address in which Doctor Herman Kiefer, chairman of the Committee on the Department of Medicine and Surgery, gave an interesting account of the progress of the school, after which he introduced Doctor Leartus Connor, of Detroit, president of the Michigan State Medical Society, under the auspices of which the ceremonies were conducted, who delivered an address befitting the occasion, at the conclusion of which he proceded to lay the corner-stone with a silver trowel. The meeting, which was composed of about three thousand people, then adjourned to University Hall, and listened to an admirable address by Doctor J. George Adami, of Montreal, which was preceded by introductory remarks by President James B. Angell.

VIRCHOW'S BIRTHDAY ANNIVERSARY.

THE eightieth birthday of Professor Virchow was celebrated at Berlin, October 12, 1901, by appropriate ceremonies at the Pathologic Institute, and a banquet served in the lobby of the lower house of the Prussian Diet. The venerable professor, who, by the way, is also pathologist, anthropologist, and politician, delivered a speech bearing on the development of pathologic science, which consumed nearly two hours, and in which he stated that his motto had always been "*Salus populi suprema lex esto*"—Let the people's safety be the supreme law. He was made the recipient of fifty thousand marks, which had been contributed by the medical men of Germany to further endow the Virchow Institute. Emperor William conferred upon him the great gold medal for science, and the letter accompanying the decoration contained these laudable sentences: "You have broken new ground, and laid fresh foundations for medical science. Your name is written boldly upon the tablets of history, and is honored far beyond the borders of the fatherland." A gold medallion, bearing a portrait of his Royal Highness, was received from the King of Italy.

MINOR INTELLIGENCE.

CONNECTICUT has 1,060 physicians; New Jersey, 1,472; and New York, 10,112. Of the latter number, Greater New York has 5,579, and the Boroughs of Manhattan and The Bronx contain 3,991 of the number reported for the entire city.

PITTSBURG has a physician who recently entered a claim for $5,240 against the estate of a millionaire, for five months medical attendance. Visits were billed at $25.00 each, and $100 a day was charged for three weeks spent with the patient at Atlantic City.

DOCTOR S. A. KNOPF, of New York City, has proposed, as a memorial to the late President McKinley, that an extensive sanatorium, for the treatment of tuberculous and scrofulous American children, be erected at the seaside, the idea contemplating a pavilion for every State in the Union.

THE November number of The Physician and Surgeon will contain an address entitled "The Department of Obstetrics and Gynecology in an University Medical School," and contributed by Reuben Peterson, M. D., Bates Professor of Obstetrics and Diseases of Women in the University of Michigan.

DOCTOR GEORGE R. PECKINPAUGH, of Mount Vernon, Indiana, is the originator of a new cure for consumption, which has recently been announced from Evansville, Indiana. The treatment consists in the inhalation of smoke generated by the burning of various kinds of leaves, which are thought by the doctor to possess germicidal properties.

THE Maltine Company recently not only adopted the policy of declining to supply any of its preparations to department stores, but likewise of refusing to dispense them to dealers who are known to sell them to department stores. This innovation will be hailed with delight by physician and pharmacist, and is calculated to insure the Maltine people greater prestige in the professions concerned.

RINDERPEST is virulent in South Africa. An outbreak which succeeded in spreading through the Transvaal and the Orange River colony was discovered in September, but is now thought to be under control, as all government and private stock in the hands of the British has been inoculated, and stringent precautions are being exercised to prevent further contagion, although there is still danger from stock in possession of the Boers.

THE British have suffered the following losses in the South African conflicts, from the commencement of hostilities to September 30 of the present year: Killed in action, 548 officers and 5,823 men; wounded, 1,529 officers and 28,032 men; missing or prisoners, 365 officers and 9,177 men, of whom 354 officers and 8,471 men have escaped or been released; deaths from disease and accidents, 10,738 men.

HAWAII has adopted a precaution against the spread of leprosy. Heretofore relatives and friends of lepers at Molokai have been allowed personal contact with the diseased. The Hawaiian Board of Health recently prohibited this practice, and built a stockade of two wire fences, four feet apart, through which all visitors henceforth desiring to communicate verbally with the unfortunates will be obliged to talk.

ALASKA has recently experienced an epidemic of influenza. Reverend Father René, who has charge of the Catholic missions in that territory, reports great mortality among Indians dwelling in the vicinity of the lower Yukon. This divine estimates that upward of three thousand have succumbed to the disease, which prevailed chiefly in the abdominal form, the aged especially suffering in the enormous onslaught.

THE women of Norway are engaged in a crusade against tuberculosis. A sanitary league has been organized, the purpose of which is to disseminate information of a prophylactic nature regarding the disease. Lectures and literature are being employed to instruct the women of the poorer class, in the hope of thereby preventing invasion of the family circle, and further spread of the disease where it is already present.

FAMINE is imminent in Russia. The Czar has ordered an increase in the central government's famine fund from 530,000 roubles ($265,000) to 14,000,000 roubles ($7,000,000), in order that the inevitable suffering may be reduced to a minimum. A sum equivalent to $396,000 has been appropriated for several of the provinces, but it is estimated that nineteen provinces will require state assistance, and hence the necessity for increasing the national exchequer.

DOCTOR J. HENRY ÇARSTENS, of Detroit, read a paper entitled "Surgery of the Kidneys," at the recent annual meeting of the Clinton County Medical Society, which was held in Saint Johns, Michigan. This medical guild is one of the oldest in Michigan, the date of its organization being March 1, 1864, at which time its membership embraced five physicians. The society now enjoys an enrollment of twenty-five members, and is in a flourishing condition.

A CHANGE in location has been made by the following physicians: Doctor H. W. Longyear, Detroit—office from 698 Woodward avenue to 271 Woodward avenue; residence from 698 Woodward avenue to 462 Jefferson avenue. Doctor W. A. Spitzley—from Ann Arbor to Detroit; office, 270 Woodward avenue; residence, 612 Second avenue. Doctor S. J. Wilson—from Wacousta to Detroit, 317 Cass avenue. Doctor Donald Maclean and Max Ballin, Detroit—to 271 Woodward avenue. Doctor Reuben Peterson--from Chicago to Ann Arbor; office, corner State and Liberty streets; residence, Washtenaw avenue. Doctor George Dock, Ann Arbor—office, corner State and Liberty streets. Doctor Thomas S. Burr, Ann Arbor—office, from Henning Block to 300 South State street; residence, from 204 North State street to 807 Lawrence street.

THE Wayne County Medical Society elected the following officers at its recent annual meeting: President, Doctor Samuel Bell; vicepresident, Doctor Charles C. Yarbrough; secretary, Doctor Hugh Mulheron; treasurer, Doctor C. Henri Leonard; directors, Doctors Peter M. Campbell, Walter J. Cree, George G. Gordon, Nathan Jenks, and Wadsworth Warren. The annual address was delivered by the retiring president, Doctor John J. Mulheron, after which a banquet was served.

DOCTOR PRESLEY M. RIXEY will be appointed Surgeon-General of the Navy in December, 1901, at which time Doctor Van Reypen's incumbency of this office will expire. Doctor Rixey, who is now Medical Inspector in the Navy, was born in Virginia. In January, 1874, he was appointed Assistant Surgeon in the Navy, and in 1898, when Doctor Leonard Wood resigned the physiciancy of President McKinley's family to organize the Rough Riders, Doctor Rixey was selected to fill this position.

THE annual meeting of the Detroit Academy of Medicine was held Tuesday evening, October 8. The address of the occasion, "Thoughts Concerning Medical Progress," which was delivered by Doctor Arthur D. Holmes, is published in another department of this issue. The following officers were elected for the ensuing year: President, Doctor Arthur D. Holmes; vicepresident, Doctor Wadsworth Warren; secretary-treasurer, Doctor Harrison D. Jenks; director, Doctor Justin E. Emerson.

DOCTOR GARRIGUES offers the following as a possible explanation of the source of the gangrene which caused the death of President McKinley: "Bacillus emphysematosus is constantly found in the intestine, where it is not only harmless, but useful. In the vagina it becomes the cause of emphysematous vaginitis. If it enters the uterus of a puerpera, it gives rise to the dangerous tympania uteri, and sometimes the ominous septic emphysema. In general surgery it is the cause of one of the most dangerous wound diseases—acute septic gangrene. It is easy to imagine that in a body with lowered vitality, this bacillus wandered from the neighboring intestine to the tissues behind the stomach, where the gangrene was found."

RECENT PUBLICATIONS.

REVIEWS.

PHYSIOLOGICAL LABORATORY GUIDE.*

BOOK-STUDY only of physiology belongs to the past. Laboratory work is an essential part of present-day medical education. The student now demonstrates to his own senses those facts which students of a few years ago received without question by word of mouth or from the printed page. In carrying on this work, however, especially in the classroom, some manual or guide is indispensable. The author of this work knows how much the average student is able to do within the allotted time, and also keenly understands how to make the student discover the facts for himself. His methods are incorporated in the plan of the book so that any one is able to profit by them. It is essentially a working guide-book for the physiologic laboratory. Blank pages have been provided for the convenience of both student, in answering questions and problems, and the teacher, in inspecting the work. Altogether it is the handiest guide for this purpose that we have seen. A few errors have crept in in the publishing of the book which can easily be corrected in subsequent editions.

* By A. W. Ives, M. D., Professor of Physiology, and Assistant to the Chair of Nervous Diseases in the Detroit College of Medicine; Visiting Neurologist to Saint Mary's Hospital, Detroit. The J. F. Hartz Company, Detroit, Michigan, 1901.

THIRTY-SECOND ANNUAL REPORT OF THE SECRETARY OF STATE ON THE REGISTRATION OF BIRTHS AND DEATHS, MARRIAGES AND DIVORCES, IN MICHIGAN FOR THE YEAR 1898.*

THIS report represents much work and should be expected to be of some practical use. Although thirty-one annual reports have been previously issued it is confessed that all were inexact and unreliable. This one, the first since the new law for the "registration of deaths in Michigan and requiring certificates of death," is considered reliable. Its value will be demonstrated only after more study.

* Edited by Cressy L. Wilbur, M. D., Chief of Division of Vital Statistics. Published by authority.

MENTAL DISEASES.*

THE scope of this volume is practically new territory in English medical literature. As suggested in an apt quotation, the author has had to rely only upon fragmental human experience, and yet he has been able to produce a classic work which is a credit not alone to himself but to the profession as well. The broad, sensible views he entertains are indicated in the following sentence concerning general treatment: "The first requisite in the treatment of any case of ordinary insanity is a good nurse; the second, a good cook; and the third, good air, with pleasant surroundings." A clear style, methodical arrangement of subject-matter, and elegant lithographic plates, illustrations and drawing contribute in the publishers' hands to effect a work of art.

* By Henry J. Berkley, M. D., Clinical Professor of Psychiatry in the Johns Hopkins University; Chief Visiting Physician to the City Insane Asylum, Baltimore. D. Appleton & Company, New York.

TWENTY-SEVENTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN.*

PART I consists principally of the President's annual address and of the Secretary's official report. Part II is a documentary report of the chief meteorologic conditions in Michigan in 1898, and of the various communicable diseases, including a statistical study of them. This work represents the labor of a busy office.

* Published by authority. Robert Smith Printing Company, State Printers and Binders, Lansing, Michigan.

The Physician and Surgeon

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ORIGINAL CONTRIBUTIONS.

ADDRESSES.

THE DEPARTMENT OF GYNECOLOGY AND OBSTETRICS IN A UNIVERSITY MEDICAL SCHOOL.*

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.

PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF MICHIGAN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

I have chosen for the subject of my address a theme which can hardly fail to be of interest to such an audience as it is my privilege to appear before tòday. It is, " The Department of Gynecology and Obstetrics in a University Medical School."

Whenever a comparative stranger is called to an institution such as ours, a natural curiosity will always exist as to his proposed plan of campaign. And, if he be in earnest and filled with his subject, he will be only too eager to gratify this curiosity.

The present incumbent of the chair of Gynecology and Obstetrics in the Medical Department of this great University is fully cognizant of the honor conferred upon him by the choice of the faculty, and realizes clearly the arduous task which lies before him, if he hopes to equal the good work of his predecessors—Sager, Dunster, Martin—each and all of them able and conscientious men who gave up the best part of their lives to their beloved University. Long may she honor them for their good work.

Nor can I allow this occasion to pass without publicly expressing my regard and appreciation of the gentleman I have succeeded, Professor J. N. Martin. Many of you know him personally, and can testify to his rare gifts as a teacher, his skill as a bold and conscientious surgeon, and his kindliness to his pupils. I know that you will join with me in the prayer that he be soon restored to health.

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* Address delivered at the opening exercises of the Medical Department of the University of Michigan, September 24, 1901.

At this, the beginning of the twentieth century, it may be well to look backwards and consider the position of Gynecology and Obstetrics in our medical schools fifty years ago. More than once, during the last five years, have I heard the complaint from the student that he had not been afforded sufficient opportunities of perfecting himself in the bimanual examination of the female generative organs, or that he did not feel competent upon graduation to conduct a normal case of labor, since he had seen only two or three cases of confinement, and that most of his knowledge was theoretical. It is true that from the very nature of things it will always be a difficult problem to furnish abundant obstetric and gynecologic material to the student. No matter with what delicacy the examination of the female patient may be conducted, the natural modesty of the sex, causing them to shrink from such examinations, ever stands in the way of our supply of material. Even in the large medical centers this same difficulty has to be overcome, and the greatest care exercised, and the number of examinations of each patient strictly limited, else the patient will seek some clinic to which the students are not admitted.

But what were the conditions fifty years ago? Certainly not so much complaint then as now, because it was not considered necessary or the proper thing to thoroughly examine a woman's pelvis.

In PROFESSOR CHARLES D. MEIGS'S "Textbook on the Diseases of Women" (published some fifty years ago), we find a case reported at some length which accurately portrays the attitude of the teacher of gynecology at that time. He speaks of being called to a young woman of about twenty, who was flooding profusely. He graphically describes how he sat by her bed all through the night administering sulphuric acid and other remedies to relieve the hemorrhage, which was of such a severe nature as to render the patient unconscious at times. He reassured her mother, saying that when the time came he could stop the hemorrhage at will. Finally the patient's condition became so alarming that he was obliged to pack the vagina to control the hemorrhage. Commenting upon the case, he says that the delay was for the purpose of saving her the mortification of the *touch* (touch being in italics), and that he would act in a similar manner in another case of the same nature. Not one word to the class about what caused the hemorrhage. Evidently the diagnosis was never made. Simply the case was related in order to impress upon their minds the necessity of refraining from vaginal examination as long as possible. Yet PROFESSOR MEIGS was an authority on the subjects upon which he lectured. DOCTOR MARCY, of Boston, in a recent paper, states that in his student days (1864) he was taught to "make a small hole in a sheet placed over the patient and through this to examine, and, if thought necessary, to thrust in the long cylindrical speculum, in the almost futile hope of adding to his knowledge." Even as late as 1869 he was obliged to seek in Germany opportunities for physical examinations nowhere permitted in America.

With this kind of instruction it is not strange that very little progress was made in the knowledge of pelvic pathology. We must remember that in spite of the pioneer work of such men as McDOWELL, and the two ATLEES, up to 1851 there had been but twenty-seven cases of ovariotomy in this country, and only two hundred and eighty-eight cases in the whole world. The operation was looked upon with disfavor by surgeons and those who lectured upon diseases of women. MEIGS, in his book published in 1848, condemns the operation very emphatically. Although the number of cases of ovariotomy showed a marked increase in the decade from 1860 to 1870, the operation was slow in being established as a justifiable surgical procedure, although with or without tapping the outcome of the disease was invariably fatal, unless relief came through the use of the knife. In Bedford's "Textbook on the Diseases of Women and Children" (published in 1870), we find a mere passing mention of the surgical treatment of ovariotomy, but stress is laid upon the good effects of ointments and internal medication. He concludes the clinical consideration of a case of ovarian tumor as follows: "I might mention a favorite practice, in these cases, of DOCTOR HAMILTON, said to have been successful in his hands, and, indeed, I think I myself have recognized good results from it. It consists of patting the tumor with the ends of the fingers, together with pressure several times a day, and the internal administration of the muriate of lime." And this in a city in which the famous Woman's Hospital had been established, under the auspices of MARION SIMS, fifteen years before. The founding of this special hospital, and the original work of its three men, SIMS, EMMET, and THOMAS, gave an impetus to gynecology in America which soon placed it in the highest rank. The advent of Listerism and the gradual dissemination of the knowledge that the peritoneal cavity could be opened with safety, led to a large number of abdominal sections for various lesions, and to a more accurate perception of pelvic pathology.

Perfection of operative technique rapidly followed, and the number of imperative and elective operations on the internal and external female genital organs assumed enormous proportions. Instead of major operations being performed by the comparative few, every physician, while he would hesitate to amputate a limb, opened the peritoneal cavity without hesitation or the slightest fear. This necessarily resulted in poor work, and the gynecologist was blamed for hasty and unnecessary operations, when, in reality, the blame should have been placed upon the novice, who operated without the adequate training which would qualify him to decide as to the necessity of operation in a given case.

The diagnosis and operative treatment of pelvic lesions were taken up by the general surgeons, who hastened to perfect themselves in a field which they had formerly neglected, until now a large amount of gynecology is done, and done well, by the general surgeon, who possibly at times forgets the debt he owes the pioneers and specialists who paved the way for his easily-acquired knowledge. But there is not, and should not be, any real controversy between the general surgeon and the gynecologist. Both should be good general surgeons; only one has chosen to devote himself to a particular field. That the skilled gynecologist is recognized as a competent abdominal surgeon is well illustrated by the fact that the surgeon chosen to operate upon the late PRESIDENT McKINLEY was a distinguished gynecologist and abdominal surgeon.

Necessarily, the student has profited by this increased knowledge of pelvic pathology. He is not urged at the present day to refrain as long as possible from making a pelvic examination, but is taught that without such a thorough examination diagnosis is impossible.

It is needless for me to state that in our medical school exceptional opportunities exist for the most thorough teaching of gynecology. The material at the University Hospital is large and varied, and, because of the exceptionally wise system in vogue, every patient can be utilized to the best advantage for teaching purposes without in the slightest degree interfering with the benefits accruing to the patient from hospital treatment. Only those who have taught in schools where the teaching material is semiprivate in its nature can fully appreciate what an immense advantage a hospital system such as ours offers. Each case, operative and nonoperative, can be thoroughly and systematically studied, both by the one in charge and by the student. The ever-increasing amount of material will allow of the grouping and consideration of different varieties of the same disease at one and the same clinic. In order that this may be done, however, it will be necessary to increase the hospital facilities which are far from adequate to accommodate the number of patients who apply for admission. A few years ago my honored colleague, PROFESSOR HERDMAN, read before the American Academy of Medicine a paper in which he set forth the clinical advantages offered at the University of Michigan. At that time he made this apt quotation from MACAULEY: 'It is not the conning over large libraries that makes the learned man, but a thorough digestion of a few well-selected books.' As applied to medicine, nothing can be truer. I have seen men who in general practice had had an immense experience with certain diseases, such as, for instance, typhoid fever, yet knew but little of the disease, because each case had been passed over in a superficial and perfunctory manner. Yet, if this man had been well grounded in physical diagnosis, if his powers of observation had been trained in the proper manner, what an immense fund of knowledge could have been gleaned from the number of cases circumstances had forced upon him. He certainly could have become much more proficient because of this vast experience. As it is best for the student to make his selection of good books from a vast library, so it is conducive to the best interests of both teacher and student that the cases to be used for clinical instruction be selected and grouped from the largest possible material.

Therefore, I would urge that the good work go on; that our material, which has increased in such a marvelous way since the opening of the University Hospital in 1891, be still further multiplied. Let us remember that in the larger medical centers, on account of the competition of other medical schools, and hospitals to which no students are admitted, it is sometimes difficult to be provided with teaching material. These institutions would never think of keeping cases waiting to enter the hospital because of lack of room. Teaching material is not so plenty that it is turned away, but adequate space is at once found for its accommodation. Just because we are so favorably situated, so that we have more cases than we can care for, we must not be too self-satisfied, and rest on our laurels. Money, in the shape of endowments, is pouring into the larger medical schools, and we must increase our facilities if we would expect to maintain our position at the front. We must remember, also, that because our school is situated in rather a small center the natural impression exists that our clinical material must be correspondingly small. It is distinctly humiliating to have students give as their reason for graduating at some other college that they desire greater clinical advantages. It would be more humiliating if it were true, but it is not particularly pleasing as it is. I have talked with a number of students who had made the change, and they were dissatisfied, and found out after it was too late that, because of the accessibility of the cases and their adaptability to clinical teaching at our school, they had made a mistake and would better have remained.

I hope to live to see the time when our University Hospital will have reached such a size that students will flock here, not only from all parts of this country, but from abroad, because of the superb clinics it offers.

In the very nature of things, the larger amphitheater operating clinic is bound to disappear almost entirely from medical teaching. The diagnostic clinic before a comparatively large class still has, and will always have, a distinct place, since, through questions and answers, the entire class can take part in and profit by the exercises. But not so with the grandstand operative clinic. No matter how skillful the operator may be, he will fail to interest his audience if they cannot see what he is doing. Consequently, if the student be without interest in the work before him, he is wasting his own and his instructor's time. The necessary details and technique of important operations should be taught to small sections of the class, so that each student can see the minutest move on the part of the operator. It is oftentimes difficult to arrange the sectional work to this end, but I am convinced that it can be accomplished, and we should always have this ideal before us.

The dry didactic lecture, in my opinion, will also become a thing of the past. Of course, a certain amount of didactic work will always be required, as in no other way can the instructor give a systematic *resumé* of the most recent advances in his department. But long lecture courses, the subject matter of which could be learned as well from textbooks, must give way to instruction in which the student comes in close contact with the disease which is being studied. Lantern-slide demonstrations should be employed whenever possible, because it is easier, in this age at least, to keep up the interest by appealing to the eye as well as to the ear.

Again, I must insist upon the necessity of educating the student's tactile sense, so that he will be able to interpret what the examining finger finds within the pelvis. I consider the so-called "touch course" among the most important for the actual needs of the student, for he will be called upon to make use of it as soon as he begins to practice.

I would also suggest that in the department which we are considering, it would be well to provide elective courses in the special pathology of the genital organs, in bacteriology as applied to the diseases of women, and a special operative course might be added to the curriculum whenever possible. While I would not make a specialist of a student at the expense of his general training, I think it is within the province of a university medical school to provide special work for the advanced student whose tastes are in this direction.

You will notice, perhaps, that I have, up to this time, dwelt upon only one aspect of the subject. Obstetrics is as important, if not more so, than is gynecology. Possibly it has been somewhat neglected of late, because of the glitter and glamour of operative gynecology. It is not a matter of mere chance that obstetrics and gynecology are included in the same professorial chair. As one writer has put it, "they cannot be separated, for they involve the study of the same organs, and of many of the diseases of the same organs, only under different circumstances."

Long before the advent of antisepsis it had been demonstrated that puerperal fever was caused by something introduced into the birth canal by the accoucheur, but the mortality of the lying-in chamber was frightfully large until the inauguration of the antiseptic technique. Since that time it has become possible to make use of the lying-in hospital material for teaching purposes, without any particularly added danger to the patient. It is not so very long ago that obstetrics was taught entirely by means of the didactic lecture, and the first case of labor seen only after graduation. In other words, the science of obstetrics was well taught, but the art was entirely neglected so far as the student was concerned. EDGAR tells us that up to 1886 not a single medical school in New York city required its students to witness cases of confinement before graduation, while ten years later six medical schools in the same city required the student to attend at least six cases of confinement before receiving a diploma. This clearly shows the trend of modern obstetric teaching. The instruction is becoming more and more a series of demonstrations, either at the bedside or by the use of manikins and models. Just as in gynecologic teaching, the hands should be taught to execute the theoretic knowledge which has been learned through lectures and recitations. A student may know the signs of pregnancy, but this knowledge will be of little avail until he has been drilled in the methods of palpating the pregnant abdomen. He should be taught the use of the pelvimeter, both on the living patient and on the bony pelvis. He should perform the principal obstetric operations upon the manikin under the guidance of a competent instructor. He should learn by means of glue casts the manner of repairing immediate tears of the perineum. In other words, manual training methods should be applied as far as possible to obstetric teaching.

Now, what are the conditions that confront us in our school as regards obstetrics? While the obstetric material at present is not particularly abundant, I know of no place so favorably situated for the building up of a large obstetric hospital clinic. The State laws are unsurpassed in this regard, and it will require merely systematic work to provide us with all the cases necessary. Steps have been taken to organize an Out-Patient Lying-in Clinic, which will prove of an immense advantage to the student. Under the direct supervision of the members of the department, the latter will be taught how a case of normal labor should be conducted at a private house, and the convalescence can be left in his charge. Through the generosity of the regents, the department will be liberally supplied with manikins and models, which will allow of the most thorough work being done.

To carry out the schedule which I have just outlined, a number of things are necessary. First, there must be complete coöperation between the head of the department and his corps of assistants. They must be a united family, fired by the same spirit of enthusiasm and zeal for the work in hand. While the interests of the department should be paramount, and the personal equation reduced to a minimum, there yet remains much that can be done by the chief which will be conducive to the well-being of his assistants. He must remember that only through him can they advance in knowledge or reputation, since he alone has the assignment of their duties, and the disposition of the material through the use of which their scientific reputations can be made. Give a man the opportunity and let him be a worker and he can move the world. Selfishness and jealousy in the chief of the department are insurmountable barriers to progress. He must be broad-minded, a reader of men, and possessed of executive ability to be a success as the director of such an enterprise. Mutual loyalty must be the watchword between the different members of the staff.

Every instructor must have the confidence and loyalty of his class if he hopes to attain the highest success as a teacher. A man may be learned, a worker, a valuable investigator, yet he may fail as a teacher because he has not that something which puts him *en rapport* with his class. Give us, then, your confidence. Come to us if things appear unsatisfactory, and I am sure you will always find us reasonable and only anxious for the general good.

A final word must be said of the research work, which should form part of the program of every department in a school such as ours. Research work! What a fascination the words have for every true physician with scientific aspirations. And how much and how good work would be done if circumstances would only allow of it. But it is only in especially favored places that this work can be carried on. The clinical material at the disposal of the department must be used not only for teaching purposes, but for the advancement of human knowledge. The manner in which this is done, or whether it will be done at all, will again depend largely upon the chief. He it is who not only must investigate, but must indicate and map out the lines which the investigation of his assistants must follow. A man, after all, is judged by the outside world mainly by the volume of original work which he turns out. It is taken for granted that he is a good teacher, although that is not always true. The number of endowments which are being made for research work shows that the laity are slowly but surely coming to see the importance of giving encouragement to this kind of labor. It means that the public is beginning to realize that the investigator must give his whole time to his subject, and must not be hampered with questions of the ways and means of earning a living. Let us hope that these endowments are only a beginning, and that the clinical chairs will soon be similarly blessed.

The words of welcome to the incoming class are assigned, I believe, to some other member of the faculty, but I would beg the privilege of a few sentences. Those who are just beginning their studies in any department of a university have one great advantage over the members of the other classes. They have it in their power to employ every moment of their time during their entire course in the most advantageous way. There are some of us who envy you this golden opportunity. We wish that it were possible to recall the fleeting years and start over again. There are many changes we would make. Many hours would be devoted to different purposes. You have but a short time in which to acquire a great deal. Remember that work, systematic, hard, daily, not just-before-the-examination work, can accomplish wonders. Do not procrastinate and think you can make up for lost time by mighty intellectual efforts at the last. Those of us who have tried can testify to its being a dismal failure.

With no mere formal words do we welcome you, but as one friend receives another into a united family circle. May your Alma Mater have cause to be as proud of you at the completion of your course, as you will have cause to love and honor her.

MEMOIRS.

CLUB-FOOT.*

By BART E. McKENZIE, B. A., M. D., TORONTO, ONTARIO.

SURGEON TO THE TORONTO ORTHOPEDIC HOSPITAL; ORTHOPEDIC SURGEON TO GRACE HOSPITAL; ASSOCIATE PROFESSOR OF CLINICAL SURGERY IN THE ONTARIO COLLEGE FOR WOMEN.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

In speaking upon the subject of club-foot I shall refer especially to the congenital deformity which is known as *talipes equino-varus*. There are many deformities of the foot and sometimes the word club-foot is used to signify varieties other than that just named. For example, osteomyelitis affecting the tibia has, in some instances, interfered with its growth at the lower end, permitting the shortened tibia and growing fibula to push the foot inward so that the weight of the body transmitted through the leg would naturally tend to reach the ground at the outer side of the foot. Simple *equinus* arising more commonly from some form of paralysis, the heel being drawn upward to a varying extent, is sometimes spoken of as club-foot. Even the condition of the foot which is more properly and commonly known as flat-foot is sometimes spoken of under the name designated above. At this time, however, I shall confine my remarks wholly to the consideration of *equino-varus*, which is the true club-foot.

In order to treat club-foot properly and with a reasonable prospect of success, we must thoroughly understand the normal architecture of the foot and the varying pathologic anatomy which is found present in club-foot. In the mechanism of the foot it is proper to speak of three arches, two of which are commonly described in the works on anatomy, the third of which, however, is of more importance than the others in the consideration of our subject. The first is the longitudinal arch, the heel being a single posterior pier while the heads of the metatarsal bones present a compound pier in front. The second arch exists under the metatarsal bones and is transverse. The third is seen clearly only when the two feet are considered together. The piers of the arch are found at the outer borders of the feet, and it is incomplete in either foot alone; that is to say, considering only one foot, the outer end of the arch is supported upon the ground at the outer border while the inner extremity of the segment which is seen in one foot has no direct mechanical support. The segment terminates at the inner border of the foot and does not come into contact with the ground.. The maintenance of the extremity of this segment in a normal position has much to do with the elasticity and gracefulness of the foot. The necessary support to so maintain it is found in the muscles which are inserted at or pass under the inner border.

When the end of this incomplete arch is unduly depressed it gives us a form of flat-foot; when the balance of the foot is lost by its elevation so that the foot is thrown more toward the outer border, we have a degree of club-foot. The parts moving upon each other at any joint should be maintained in even balance. For example: the extensors at the knee may be so weak that the hamstrings do not permit of an even balance but cause habitual flexion, and in time contracture of these hamstrings will occur and permanent flexion at the knee will result; or, on the other hand, the hamstrings may be so disabled that flexion cannot be effected. In a similar manner at the foot, all varieties of motion which are normal to the foot should be capable of performance. If, for causes which were prenatal, the structures which draw the foot inward and the heel upward have become so shortened that the foot is thrown upon its outer border, even tending to roll over till the dorsum of the foot comes into contact with the ground, we have a compound deformity. (See Figure I.)

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*Read before the NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN at its Port Huron meeting.

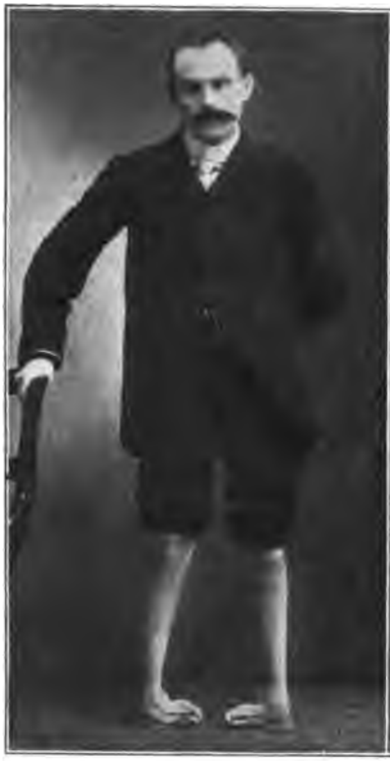

FIGURE I.

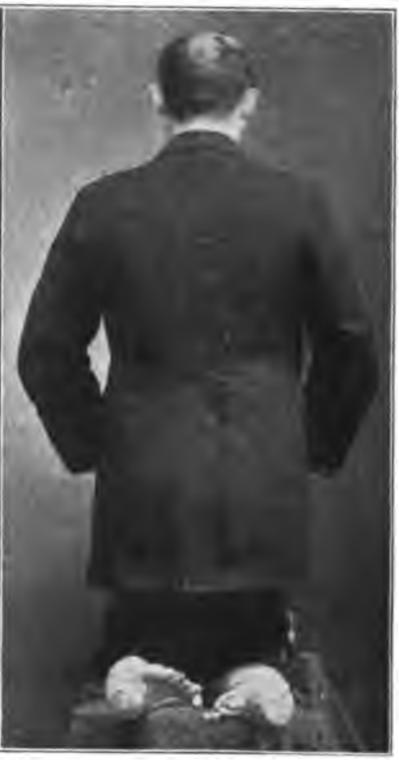

FIGURE III.

It is necessary to have a clear understanding of the elements which make up the final and resulting deformity and disabilty. First let us look at the foot *per se* as if it were disarticulated at the ankle-joint. It will be seen that the anterior part of the foot curves inward so that the inner border is shortened and the outer border is relatively lengthened. (See Figures II and III, for comparison.) The longitudinal arch too, in most cases, is greatly shortened, the plantar ligament, the plantar fascia, tibialis posticus, flexor longus digitorum, flexor longus hallucis, the calcaneo-scaphoid ligament and other structures at the plantar surface and inner border are unduly short and present great resistance when an effort is made to place the anterior part of the foot in normal line with the posterior. Even the bones toward the inner and plantar aspect of the foot are shorter and smaller, and present a more concave appearance than normal. Exactly the opposite conditions prevail at the outer border and dorsum of the foot, namely, the muscular, ligamentous, fascial, and osseous structures are relatively lengthened, and the appearance is more convex than normal. In the consideration of the treatment of club-foot the deformity just described should be considered alone and apart from that to which I am about to refer.

Assuming that the foot *per se* is duly corrected and normal, and that none of the conditions above described are present, it might still be a fact that the relation of the foot to the leg is wrong, namely, that the heel is unduly drawn upward and maintained by short calf muscles so that it is impossible to bring the foot into a normal relation to the leg. The in-turning of the foot described before is known as varus; that which we are now considering is equinus. In this latter the anterior part of the articular surface of the astragalus which should normally come in between the malleoli is often unduly wide, so that it cannot readily be forced back into its place. The anterior structures are relatively lengthened and powerless to produce dorsi-flexion, while the calf muscles, terminating in the tendo Achillis and inserted at the posterior end of the os calcis, are shortened. To lose sight of the distinctive features of each part of this complex deformity is to let go of the first principles of successful treatment. In the great majority of patients the complete and satisfactory rectification of the part first described, namely, the varus, is much the more difficult. The practice, which is so common, of cutting the tendo Achillis and bringing the heel down so as to rectify at first the relation of the foot to the leg is to place an insuperable obstacle in the way of obtaining a satisfactory result. Let us assume that the heel has been brought down as just referred to, and the relation of the foot to the leg has been made normal. Now the main axis of the foot is at right angle to the axis of the leg, but the distortion of the foot in itself still exists. It will be seen that if an attempt be made to correct the varus under these circumstances the forcible pulling of the anterior part of the foot outward is like turning a crank, the foot being the crank proper and the leg the axis about which the turning takes place. On the other hand, before the heel has been brought down it will be seen that the anterior part of the leg and the dorsum of the foot are practically in the same plane, and if an attempt now be made to rectify the varus by pulling the anterior part of the foot outward we have a long lever, the foot in the vicinity of the external malleolus being a fulcrum over which prying may be done, while the foot anterior to that is one end of the lever and the leg the other. A little careful attention to this point will at once show the wonderful mechanical advantage there is in correcting, first, the varus. There is no disadvantage in leaving the correction of the equinus to a later time.

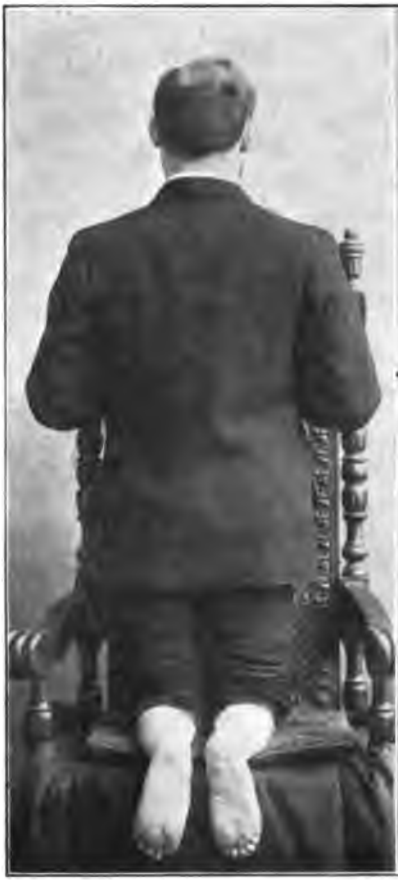

FIGURE IV.

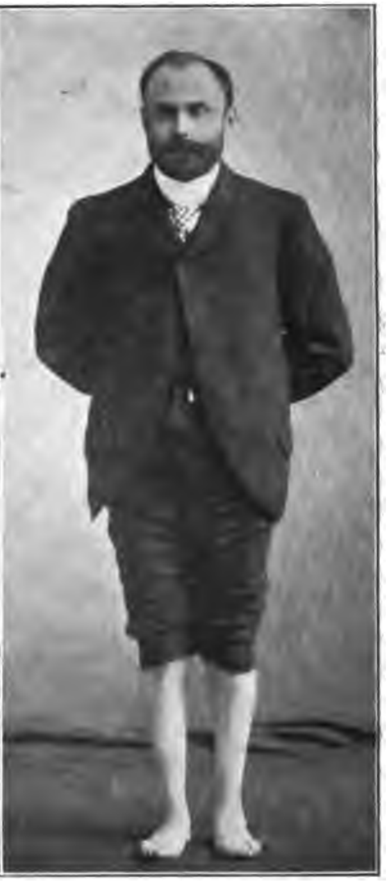

FIGURE II.

The principles of treatment will be the same whether in the adult or child.

The question is sometimes asked, What is the proper time at which to commence treatment. Attention should be given to the case from the earliest days of infancy. For the first year, or certainly for the first eight or nine months, the attention, however, should be given by the nurse or mother, under the direction of the surgeon. The treatment should be manipulation of the foot and leg, an effort being made to correct or over-correct with the hand the distortion before referred to, giving most attention to turning the foot outward, so as to rectify the varus. Unfortunately, the practice is common to encase the foot in some sort of restrictive appliance, plaster of Paris, club-foot shoes, et cetera. The application of such tends to interfere with the development of a foot and leg, which in all cases comes short of normal completeness. Massage and manipulation, as just described, on the other hand, will tend to favor the more complete development of the leg and foot. Even if correction were fully made within the first year it cannot be maintained without the use of mechanical means. Nature's method of retaining the corrected foot in position is found in its normal function in walking; hence it is not important that complete correction be effected until the time comes when the child can bear and carry about his own weight. When the time comes for the surgeon's active interference, the steps to be taken will depend much upon the resistance offered by the foot. In a considerable number of instances in which manipulation by the nurse or mother, as above described, has been intelligently carried out, the surgeon will find it sufficient to correct the foot by his hand, and to fully rectify its deformity and to maintain the correction by some fixed dressing, of which plaster of Paris is the best. Sometimes this may be done with one dressing. More commonly several dressings are required.

Assuming always that the deformity of the foot *per se* has been over-corrected, attention should be given to the rectification of the equinus. Very seldom can this be wisely done without section of the tendo Achillis. No hesitation need be felt in making complete section of the tendo Achillis, or any other tendon. The foot is then placed in an over-corrected position so that the plantar surface of the foot shall be at an angle of eighty degrees or thereabouts with the legs.

Assuming that the first steps are not so easily accomplished, certain structures may be felt digitally, which offer marked resistance to our efforts. Of these I find the plantar fascia the most notable, and that which I generally cut first when cutting is found necessary. Following this, the tibialis posticus tendon offers most opposition. Then there is the internal lateral ligament, and often the long plantar ligament. It is exceedingly uncommon to find the tibialis anticus offering any effectual resistance. This is due to the fact that, while the in-turning of the foot would point to a short tibialis anticus muscle, yet the condition of equinus would indicate lengthening of this muscle. After section of any or all of the structures just named, the foot, whether that of an infant, a child, or an adult, can, in large measure, be placed in normal shape. It is not uncommon to find, when the foot has been partially corrected, that the skin offers definite obstruction to further replacement. At this time I desist from further correction and apply my fixed dressing. When this has been left on for several weeks it will be found that the skin is ready to yield under further manipulation and still more correction can be made. It is at this point that open section, an operation connected with the name of Doctor A. M. Phelps, is so frequently made. Judging from my own observation, covering the treatment of several hundred cases, of which more than thirty were the feet of adults varying from forty-three years of age downward, open section is never necessary in the infant or child, and is seldom required even in the adult. In fact, I am disposed to make the statement that it is a practice which should be condemned. It makes a large, open wound on the inner border of the foot, following which sloughing of the anterior lips of the wound is not entirely unknown. Under the most favorable circumstances this immense gap could but fill in with cicatricial tissue. Very important structures, such as the blood-vessels and nerves, are recommended to be freely cut and, as a result, interference with the future growth and development of the foot ensues. If the step were really

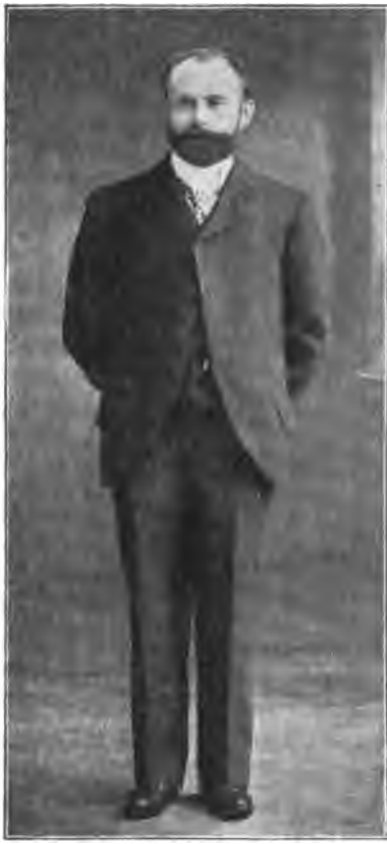

FIGURE V.

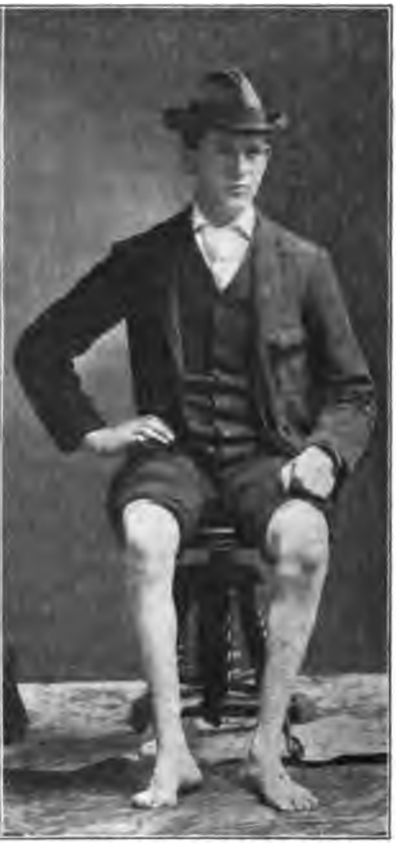

FIGURE VI.

necessary in order to correct the deformity, even these baneful effects might have to be tolerated. Seeing, however, that rectification most complete can be effected in the vast majority of cases, even in men and women in adult life, without making open incision, it seems a natural and logical claim to say that the open incision should be avoided. I do not believe that it is necessary in five per cent even of the persons over twelve years of age. The illustrations which I show here today fully bear out this contention. One photograph which I pass around is that of a young man who presented himself about twelve years ago, having double club-foot. (Figure VI.) I operated upon one foot, making the open incision. While waiting for healing to occur I began stretching the shortened structures of the other foot. Finding that I was making good headway I completed the rectification in that way. He was then a boy of about ten years of age. Successful replacement was effected in both feet, and he returned to his home, leaving in my own mind and in the minds of my surgical associates the impression that it was a very excellent result, and greatly surprising his family and friends at home. A short time ago he came to live in Toronto, and called at my office, at which time I had this photograph taken. It will be seen that, although rectification was most complete at the time, the one foot is now shorter; that contraction has occurred at the cicatrix, and that the development of the leg and foot is less than that of the other side. From observations I have been able to make in the intervening years, all of which tend to confirm the statement which I have here made, I am inclined to emphasize the position which I have just taken, namely, that "open incision" in the treatment of club-foot is not necessary, and as an operative procedure should be abandoned, except in a very small proportion of patients.

If replacement cannot be made readily with the hand in the first part of the operation, that is in the correction of the deformity of the foot *per se* section of the plantar fascia is more commonly indicated than any other operative procedure whether it be in the child or adult. In making this section the inner border of the plantar fascia very near to its point of attachment to the os calcis should be carefully defined by the fingers, and the tenatome introduced at that point should be carried directly toward the bone until it is felt to reach that part. Then it is passed along the surface of the bone under the plantar fascia and the cutting is done by a sawing motion while the fascia is put upon the stretch. Through the same incision, and without removal of the knife, the long plantar ligament may be reached and cut. The deformity of the foot will be found to yield greatly after this cutting is done. At the point here described one enters behind the arteries and extensive hemorrhage may be avoided. If the obstruction appears to be much more toward the inner border of the foot the tendon of the tibialis posticus may be cut subcutaneously, which operation should always be done just below and anterior to the internal malleolus. It is reached here with greater safety than at a point generally described for this purpose above the malleolus. The next obstruction most likely to need attention is the internal lateral ligament or its anterior part, the calcaneo scaphoid ligament. The tenotome may be so introduced as to pass parallel to the artery. and extensive section be made without causing much hemorrhage. In the vast majority of cases this proves to be quite sufficient use for the knife. Manipulation with the hand, or with a wrench specially designed for the purpose, will now effect very complete

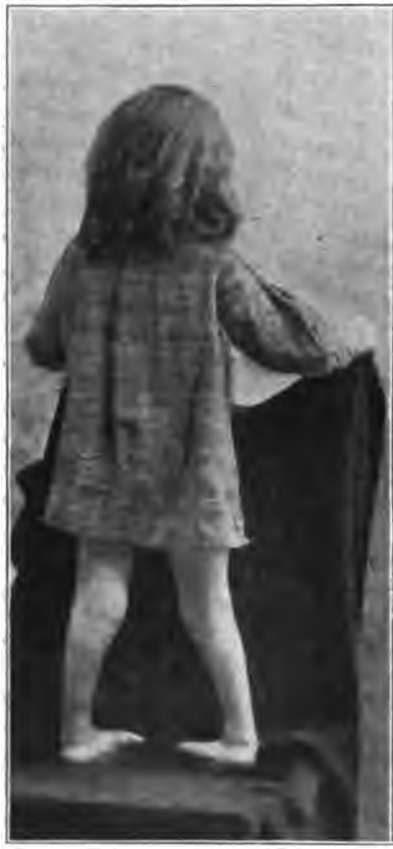

FIGURE VII.

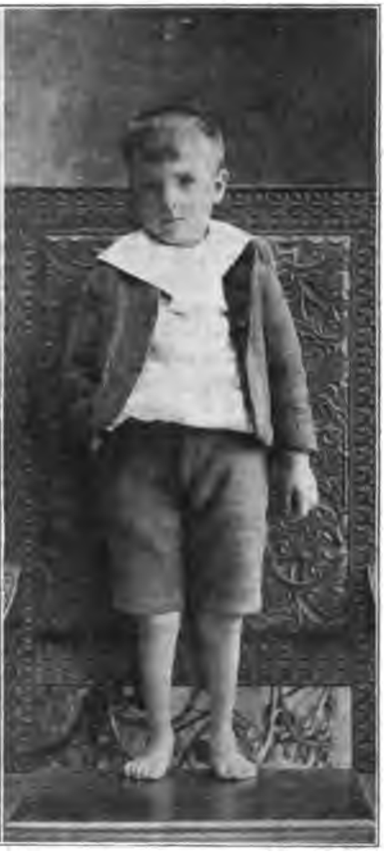

FIGURE VIII.

replacement of the foot. The hand of the surgeon is the much better instrument except in the adult, where the resistance to correction is very great. In these latter the wrench may be required so that more force may be applied.

The dressing of the foot is an important matter. Absorbent cotton laid on evenly should be used freely, so that the plaster dressing applied may be put on tightly without risk of causing abrasion. While the plaster is setting, the foot should be held in a position as nearly approaching complete correction as possible. Great care should be exercised that the pressure is an even one, otherwise abrasions or sloughs may be caused. In this work success may be attained only by the use of very fresh, active plaster of the best quality. The best webbing material to be employed in making bandages is the ordinary book-muslin. When a dressing has been applied in this manner it should be left on for a period varying from two to six weeks. At the end of that time one or two days should elapse after the removal of the dressing before a second one is applied, during which time the collection of old epithelium, et cetera, should be removed from the foot by bathing.

At the time of a second dressing, whether in child or adult, the same steps should be taken if the indications call for them. It is seldom, however, that the knife will be required. It will be found, on using the hand, that a large amount of correction can be gained without much trouble.

Nearly always in this way the deformity of the foot can be corrected in two to four dressings. When the deformity of the foot *per se* has been fully corrected, or somewhat overcorrected, especially in children, the relation of the foot to the leg, that is to say, the equinus, should be corrected. As a first step in doing this, in most cases, the tendo Achillis should be cut by the insertion of the tenotome at the inner border where the tendon is found to be narrowest. The tendon should be fully separated and correction made until the axis of the foot makes an angle of about eighty degrees with the axis of the leg. Dressing should take place as before, and the foot be retained in this position for a period ranging from three to six weeks. In nearly all cases, even the most severe, this operative work from first to last should not require more than three months. It may often be completed in about half that time.

After the removal of the last dressing, boots should be made to be worn in the daytime and a night brace to be worn every night. The tendency to relapse is more manifested at night than during the day, because the weight of the body upon the feet as the patient goes about tends to prevent deformity, whereas the bedclothes at night become a factor in increasing the deformity. The night brace may be a very simple structure having a sole plate at an angle of eighty degrees with the line of the leg bars. Into this the foot may be comfortably strapped so as to keep the foot at the angle above named. The character of the boot worn in the daytime is a matter of great importance. The last upon which the boot is made should be in a condition of valgus as above described. The sole and heel of the boot should be made to project in a marked manner toward the outer border and should be made thicker than the sole and heel at the inner border so that the outer portion of the foot may be raised and the foot thrown toward a position of pronation. We are in the habit of having these boots made of three grades, according to the degree of elevation and projection of the sole and heel. A counter should be placed in the boot at the inner border opposite the head of the first metatarsal so as to prevent in-turning of the foot. By wearing the night brace above described, and boots made in the manner here set forth, the after treatment of the club-foot is made comparatively simple and successful. It will be found that relapse will occur but seldom. It is the duty of the surgeon, however, to see that the patient returns at intervals of a few months in order that he may supervise the use of day boots and night braces. Various other plans for the treatment of club-foot have been advocated. I have found, however, that in following out the line which I have very simply described to you today, success invariably attends the treatment of this deformity, which in general is considered so difficult a one to handle.

NOTE.—FIGURES I, II, III, IV, V show the kind of result obtainable in a man thirty-one years of age; FIGURES VII and VIII, in a boy six years of age.

THE RELATION OF THE MEDICAL PROFESSION TO THE DEPARTMENT OF PUBLIC HEALTH.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

THE administration of public health affairs is a subject with which the practicing physician comes into contact daily and almost constantly, and therefore it has occurred to me that a discussion of this subject would not be out of place before a representative body of physicians in Detroit. It is with this thought in mind that I present for your consideration a few statements which I trust will call forth a lively discussion on the part of the members of this society.

The Department of Public Health is established by a state law and by the statutes therein contained this department has certain duties to perform. In administering the rules which pertain to the prevention and restriction of communicable diseases, the Public Health Department and its executive officer, the health officer, come most closely in contact with the medical practician.

There are a number of statutes relating to the duties of the physician to the Department of Public Health, as for example, Section 4453 ("Compiled Laws"), which says: "Whenever any *physician* shall know that any person whom he is called to visit, or who is brought to him for examination, is infected with smallpox, cholera, diphtheria, scarlet fever, or any *other disease dangerous to public health*, he shall immediately give notice thereof to the health officer of the township, city, or village, in which the sick person may be." According to this section the physician has no choice, "he shall immediately give notice"; but in my opinion he should do more. The family doctor is the counselor of the afflicted persons, he is the one in whose judgment they have the most confidence. He should be their teacher in matters of this kind, he should instruct them in cases, for example, of scarlet fever, that while the child may recover as far as his services are concerned, in a few days, it will take several weeks at least before the period of infectiveness of the disease has run its course. If this were done, the Department of Public Health would not meet with opposition every time it attempts to enforce its rules based upon the general health laws of the State of Michigan. On the other hand, the executive officer of the Board of Health should be willing to accommodate his medical brother as far as is in keeping with his official duties. There is no need of setting an arbitrary rule as to the time a given case of communicable disease should remain in quarantine, but each case should be a law unto itself, and the attending physician should be assured that the quarantine will be raised as soon as the case has recovered sufficiently so that its removal from isolation would be entirely safe.

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* Read before the DETROIT MEDICAL SOCIETY.

The rules in regard to isolation and disinfection apply to nearly all cases of communicable disease, but when the prevention of the spread of smallpox becomes our duty we have still another public health measure to consider, the enforcement of which may lead to some misunderstanding between members of the profession and the Department of Public Health. I refer to vaccination. What should be the relation existing at such a time between the Department of Public Health and the practicing physician? This question is taken up in an editorial article of the *British Medical Journal* (July 27, 1901), and it seems to me that I cannot answer the problem in any better manner than by quoting verbatim from this editorial. It says:

"We have received from a medical practitioner a letter which raises various interesting questions as to the relative duties and position of medical officers of health, public vaccinators, and private practitioners. The letter is as follows:

"'A case of smallpox occurs in a large laundry. The sanitary officer (by order of the medical officer of health) very properly notifies personally all people employing that laundry. Then the public vaccinator calls on all these people (not paupers, but well-to-do people, and mostly patients of other medical men) and urges revaccination, and offers to vaccinate them himself (this also by order of the medical officer of health). Now I want to know if this is right. Should not the people have been advised to consult their own private attendant as to the necessity of revaccination? It seems to me touting for work, and in a few cases it succeeded, the public vaccinator calling after to see how they were getting on. I should not have heard of it had not some of my patients resented the interference and come to me. In a case of this kind, should not the medical officer of health have given the private practitioners some notification of the extent of the trouble, instead of creating a wholesale scare?'"

The editorial continues:

"With regard to the particular query before us, the essentially important fact is, that in the presence of infection of smallpox vaccination should be done at once, and that every hour of delay is an hour of added risk. To use an extreme illustration: where a man is bleeding to death and a doctor is at hand, there is no time to send for a family surgeon to tie the injured artery. Indeed, if in an emergency sending for the public vaccinator involves any delay, some may ask: Why should not the medical officer of health himself, immediately, on the facts coming to his knowledge, have gone straight away and offered to vaccinate all who could be regarded as under the risk of infection from smallpox? It is not mentioned whether in this case the health officer or public vaccinator, or both, are in private practice. Almost certainly the latter is. If the former is not, then there would have been the less risk of offense to practitioners had he himself performed the vaccinations in the emergency. As regards our correspondent's other query: 'In a case of this kind, should not the medical officer of health have given the private practitioners some notification of the extent of the trouble, instead of creating a wholesale scare?' we regret to be unable to reply in the affirmative. In presence of smallpox it would have been unwise for the medical officer of health to spend time writing a memorandum on the facts of the case and getting up a list of the medical practitioners who might be regarded as regular attendants of the families interested, and forwarding to these practitioners a copy of his memorandum so that they might then proceed to consider whether, in the circumstances, revaccination had to be performed. By the time all that procedure had been gone through it might have been too late for revaccination to do any good; and if the wholesale scare had any effect of causing a number of people to get revaccinated who after all had not been exposed to smallpox, then it did on a small scale what a general revaccination law ought to do on a large scale."

It seems to me that the editor has answered briefly, correctly, and concisely; we have no right to delay in the face of a great danger, even if by our prompt action we rob some innocent practitioner of medicine of a longed-for and perhaps badly-needed fee of fifty cents or one dollar. As regards the vaccination offered daily at the office of the local Board of Health, without charge to the person receiving the same, it may be urged that in this instance there is no emergency. True, but even in this instance I must again refer to the editorial above quoted, in which the writer says: "As has often been pointed out, vaccination is a public health measure and ought to be administered by the sanitary authority." On the other hand our own state law (Section 4465, "Compiled Laws," 1897) authorizes the Board of Health of every city, village or township in the state to direct its health officer "to offer vaccination, with bovine vaccine virus, to every child not previously vaccinated, and to all other persons who have not been vaccinated within the preceding five years, without cost to the person or persons vaccinated, but at the expense of such city, village and township as the case may be." If the Board of Health did not offer the free vaccination, but simply advised all persons to go to their own physicians and pay for vaccinations, the inevitable result would be that the great majority would not be vaccinated, and in course of a few years smallpox would gain a foothold beyond our control.

In their endeavor to restrict that terrible disease, tuberculosis, various boards of health throughout this country have adopted a rule forbidding spitting in public places. While there is plenty of room for an argument as to the enforcement of other public health measures in cases of tuberculosis, there can be no question about the benefits to be derived from the enforcement of this new rule. In this, as in all other public health affairs, the medical profession should support the Department of Public Health. They should lend their support in two ways; first, by beginning—as charity does—at home, and breaking themselves of this filthy but strongly imbedded American habit whenever they find themselves addicted to it, and in the second place, by helping to educate the general public along this line.

The last matter that I wish to bring to your attention is one that will probably meet with most favor, because it appeals to the purse of every legitimate, registered, medical practician.

After a great many futile attempts the united medical profession of this state has finally succeeded in having passed by the legislature a law known before its adoption as the "Chandler Medical Act," and which provides "for the examination, regulation, licensing and registration of physicians and surgeons, and for the punishment of offenders against this act." This medical registration law, so-called, is close to the heart of every legitimate physician regardless of school or pathy. It provides for the punishment of the offenders against this act in Section 7, and in the following language: "Any person who shall practice medicine or surgery in this state, without first complying with the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than one hundred dollars, or by imprisonment in the county jail for a period of not more than ninety days, or by both such fine and imprisonment for each offense. It shall be the duty of the respective prosecuting attorneys of the counties of this state to prosecute violations of the provisions of this act, upon information furnished by the records of the county clerk, or a member or members of said registration board, or by any other person entitled to credit."

The statute does not make it the duty of the health officer to prosecute violations of this act, but when it says that the information may be furnished "by the records of the county clerk, or a member or members of said registration board, or by any other person entitled to credit," it may include the health officer under the last phrase, and as he is the executive representative of the profession why should not he take up these cases? The secretary of the State Board of Registration says he cannot enter the complaint in each case from the fact that he is not on the ground, and the law presumes that they should be taken care of locally. If you will allow me to be personal in the consideration of this particular question, I would say that your health officer is perfectly willing to furnish the information in these cases and to do all in his power to have the violators punished, but he is not the prosecuting attorney and consequently cannot perform the duties of that office. In other words, it is the same in this as in all other public health work, in order to accomplish the most good the medical profession must stand with a solid front in defense of the Department of Public Health, and the sooner the general public and the various public officials learn that such a relation exists, the quicker will our rules and regulations be obeyed. Harmony between the members of the medical profession and the Department of Public Health is the keynote to success.

TINNITUS AURIUM.*

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[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

Tinnitus aurium is a subjective ringing in the ears, mostly disagreeable, sometimes musical. It is a symptom, and not a disease. It accompanies diseases of the middle ear, such as nonsuppurating, especially sclerotic catarrh, acute and subacute inflammations. It is often such an annoying and distressing a symptom that patients demand relief from it, no matter what the sacrifice. Persons have been driven to commit suicide, others have become insane, from the constant noises. A symptom which may lead to such disastrous results needs our earnest attention, even if we cannot always eradicate the disease which causes it.

I shall endeavor to point out the conditions necessary to bring about the tinnitus aurium, and not consider the particular diseases in which the tinnitus occurs; because these diseases are very easily recognized, but the conditions which cause the tinnitus are not always so easily determined. The noises are various—like the hissing of steam from a tea pot, rushing of water, chirp of a cricket, sighing of winds, ringing of bells, high pitch, low pitch. Doctor Roosa says a lady patient of his kept a record of the distinct sounds she heard. It runs like this: February 13, morning, C sharp, B flat, F sharp in right ear, B flat in left ear; night, E flat, C flat, and so on. As a rule, the noises described by the patients depend on their surroundings. The noises they are accustomed to hear are those they usually describe in telling of their troubles.

It is agreed, I think, that the causes of tinnitus aurium are abnormal pressures on the labyrinthine fluid, a disturbance of the pressure equilibrium of the inner ear. What causes the disturbance of pressure? It is necessary to know this in order to treat tinnitus rationally.

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* Read before the Ann Arbor Medical Club.

DOCTOR RUMBOLD, of Saint Louis, says there are two varieties of tinnitus aurium. One variety, he says, "is caused by the flow of blood through the irregular calibered blood-vessels of the internal ear, or neighborhood, producing vibrations." This he calls vascular tinnitus aurium. The other variety, he says, "is produced by the action of diseased muscles of the middle ear, producing vibrations by a series of alternate contractions and relaxations." This he calls muscular tinnitus aurium.

In vascular tinnitus the over-filled blood-vessels or the under-filled blood-vessels cause a disturbance of pressure equilibrium of the labyrinthine fluid. The tinnitus of quinin, salicylic acid, et cetera, is due to a disturbance of vascular tension. The ringing in the ears after much hemorrhage in anemic patients in syncope, is due to lowered blood pressure. Where there is vascular tinnitus only the appearance of the drumhead may be normal.

In what DOCTOR RUMBOLD calls muscular tinnitus the disturbance of pressure is brought about by the retraction of the drumhead, this causing the stapes to push in on the fluid through the fenestra ovalis. Here, on inspection, is seen the tympanic membrane retracted, the handle of the malleus rotated and fore-shortened, the processus brevis prominent, and the cone of reflected light gone. These conditions indicate that the tympanic membrane has a position too near the inner ear.

The retraction of the tympanic membrane is brought about in four different ways. First, the tensor tympani muscle may draw it in. Second, cicatricial bands may form in the tympanum and be so attached that by their contraction they produce retraction of the membrane. Third, there are folds of mucous membrane and ligaments extending from the walls of the tympanic cavity to the malleus, incus and stapes, which may, by their contraction, draw the membrane in. Fourth, closure of the Eustachian tube may cause retraction of the membrane. Therefore, the retraction of the tympanic membrane is not always brought about by muscular contraction, and the name muscular tinnitus is not a good one. I would therefore suggest the name membranous tinnitus aurium, because in this variety the tympanic membrane is always displaced. This nomenclature simplifies matters and suggests the cause of tinnitus aurium. The classification, however, does not include the tinnitus due to reflex origin, nor that of a diseased auditory nerve, nor that produced by the spasmodic opening and closing of the Eustachian tube, nor the spasmodic contractions of the soft palate.

How can we differentiate between the vascular tinnitus and membranous tinnitus? Persons who are afflicted with membranous tinnitus hear conversation better when noises are about them. For example, they will hear better in a noisy railroad train than in a quiet room. The numerous sound waves act on the membrane and steady it. In vascular tinnitus this is not the case. Noises have no effect, and frequently make the hearing worse. External noises cannot control the flow of blood through the vessels, nor control the caliber of the vessels. In vascular tinnitus, when due to hyperemia, the pressure of air in a compressed air chamber may cause a cessation by emptying the gorged blood-vessels. In anemia it will make it worse, but nitrite of amyl will cause a cessation by causing a rush of blood to the head. By inspection in purely vascular tinnitus we find the drumhead normal. In membranous tinnitus the membrane is retracted, the short process of the hammer prominent, the handle drawn back, and the cone of reflected light gone.

In keeping the above different points in mind, and also studying and knowing the general condition of the patient, we can frequently, at least, determine whether it is a vascular or a membranous tinnitus with which we have to deal.

After we have concluded that we have a case of membranous tinnitus, it is then necessary that we should know what causes the retraction of the membrane. As stated before, there are four conditions which produce a retraction of the membrane. If the tinnitus ceases on opening the Eustachian tube, and ceases for some time, its closure is the cause. If the tinnitus begins again immediately it is not the whole cause, but, at least, partially the fault of the muscle pulling it back.

It is held that one of the functions of the intrinsic muscles of the ear is to focus for varying distances, and select one sound from a number of sounds and pay attention to that. If this power of focusing is lost, if, when listening to a number of people talking at once, only a jumble of sounds is heard, it indicates that the intrinsic muscles are weak, and cannot cause the retraction of the membrane. Some time since a good many operations were done for the cure of tinnitus by cutting the tensor tympani muscle. So many failures followed that it is not done as frequently now. If the cases are properly selected, if it is due to the muscle only there is no question as to the good result. If the focusing power of the ear is intact, if the tinnitus returns quickly, after inflation, through the Eustachian tube, we are tolerably sure in concluding that the retraction of the membrane is due to the muscle.

In membranous tinnitus, after investigating the tensor tympani and Eustachian tube, and concluding that they are not the cause of the retracted membrane, then the trouble must be in the formation of cicatricial bands or the contraction of ligaments and mucous folds in the middle ear.

The treatment is suggested by the cause. If we succeed in differentiating the varieties of tinnitus, and thus getting at the immediate condition of the cause, the results in treatment will be more satisfactory to ourselves and the patient.

THE ERADICATION OF SCARLET FEVER.*

By JAMES W. AMES, M. D., Detroit, Michigan.
MEDICAL INSPECTOR AND DISINFECTOR FOR THE DETROIT BOARD OF HEALTH.

[PUBLISHED IN The Physician and Surgeon EXCLUSIVELY]

Each century, yes, each year in the history of medicine, like unto every other branch of science, has brought to mankind some new discovery which is calculated to better his physical existence and place him nearer to that ideal plane—perfect health. I take it that the ideal physician of the twentieth century is one who would rather be called upon to prevent disease, than to be employed to cure it. With this idea in view, I address myself to this class of physicians.

Little has been said during the last century of scarlet fever. Neither the pathologist nor the clinician, the bacteriologist nor the ever-present theorist, has shed any new light upon the subject of restriction, to say nothing of the eradication of scarlet fever. The cause of the disease, the characteristics of the germ, if there be such, and the modus operandi of its transmissibility, if solved at all, must be determined by the investigators of the future. Why has this disease, so dangerous in its immediate results, and remote sequelæ, so tenacious in its existence, so readily transmissible, and so inconveniencing to public comfort and prosperity, been so lightly treated? Do we find the answer in indifference, or has the medical world gone mad in its search for the absolute, chasing the "ignus fatuus" for a specific for consumption, while known factors are unemployed in arresting the progress of a known dangerous disease? I have intimated that the trend of medical thought is in the direction of eliminating disease rather than attempting to ameliorate it, and I believe, if we apply our present knowledge, religiously, to the task of at least restricting scarlet fever, much will be accomplished toward the ultimate end. I have nothing new to offer, but much to call your attention to which seems to me essential in my daily observation of this disease, if we are to attempt to eradicate it; but before proceeding with that phase of the discussion let us examine the knowledge we possess of this disease and see, from what we know, if it be possible to eradicate it. We know—

(1) That it does not originate spontaneously, but is perpetuated solely by the law of continuous succession.

(2) That it is communicable.

(3) That it is epidemic and endemic.

(4) That it is dangerous to life.

(5) That *isolation* properly maintained restricts it.

(6) That *disinfection* destroys its vitality.

We therefore conclude that the disease is of germ origin, because the same methods employed in destroying diseases of known germ origin, isolation and disinfection, are used in scarlet fever with positive results.

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* Read before the Detroit Medical Society.

If it be true that scarlet fever is of germ origin, as it would seem from the similarity of methods employed for the destruction of diseases known to be of germ origin, and knowing the manner of communicability of diseases of known germ origin, as well as the mode of destroying the causative agent, may we not conclude that scarlet fever is transmitted like the chief of these, diphtheria?

Starting, then, upon a hypothesis deduced from known facts, we assert that scarlet fever is of germ origin, is transmitted in the same manner as diphtheria, and can be restricted, even eradicated, by isolation and disinfection.

My experience has been that isolation is simply a relative term to most householders. Its importance as a disease destroyer has never been impressed upon their minds. Even physicians do not seem to realize the necessity of this factor in eliminating scarlet fever, for I find that as soon as the danger point, so far as subjective pathology is concerned, has passed, the barrier is raised in many homes, and the patient allowed to roam through the house and in the yard while desquamation is at its highest, thus continuing its existence until the entire household has succumbed, and even an entire contiguous district. I have selected from my memoranda one hundred and fifty homes, with an average of three persons of susceptible age, in which the disease has existed since July 1, 1901. In fifty of these homes isolation was absolute; the patient saw no one save the attendant until desquamation was completed, with the result that no new cases developed. In twenty-five homes the mother attended the sick child and made occasional visits into adjoining apartments for articles of clothing, et cetera, with the result that forty per cent of the inmates of these homes contracted the disease. Sixty homes made no pretense at isolation, with a net result of ninety-eight per cent of new cases, the other two per cent being nonsusceptible. In fifteen homes the patients were isolated during the period of acute symptoms only. As soon as they were able to move about, they mingled freely with the members of the family while desquamating, with the result that every child in those homes was a victim of the disease. These observations led me to think that with absolute isolation the disease could be eradicated.

The failure to isolate absolutely can be attributed to one of three causes:

(1) Insufficient quarters, making it impossible to isolate.

(2) Indifference on the part of the public.

(3) A failure on the part of the physician to instruct them.

The last cause is simply mentioned among the remote possibilities, for I am quite sure that Detroit physicians warn their patients against the dangers of scarlet fever, order strict isolation, commend antiseptic soaps, and recommend that they remain so isolated until desquamation is complete; that quarantine means what it says; and that no person within the circle of infection should be permitted to leave the same, for business or pleasure, until the patient has entirely recovered, including such period as may be necessary to complete desquamation in the judgment of the health department. It is scarcely necessary, therefore, to mention the third cause.

The second, however, indifference, is one that time, coupled with proper education, will efface. Much is being done daily by the general practician to educate the public along these lines, and I predict that in the next quarter century scarlet fever will be viewed with as much alarm, and rightly too, as smallpox.

Many instances present themselves of insufficient quarters, small cottages, with large families occupying them. Here it will be found impossible to isolate. Such cases should be sent to the hospital at once, thus removing the source of infection; thoroughly disinfect and allow the others to return to their respective vocations, the health department keeping them under surveillance until the period of incubation is passed. The beneficent results obtained through isolation puts it in the front rank of preventive measures, but it must be absolute. The slightest suspicion of scarlet fever by the attending physician should be followed by the order to isolate. No harm can be done if the suspicion is not confirmed, while on the other hand the disease will be restricted, if it is. The duration of the isolation cannot be predetermined, nor do I believe that the use of special ointments on the hands, or of antiseptic soaps, free the desquamated cuticle from its infective qualities, for I know of instances of recurrence where these potions were freely used before and after thorough disinfection with ten ounces of formaldehyd to one thousand cubic feet of space, when the best authorities recommend but six ounces. I conclude, from these observations, that patients should remain isolated until roughness has entirely disappeared from the hands and feet, as these parts are the last to complete the process, even if it takes seventy days to accomplish it. It is generally conceded that the danger of infection is greatest during the period of desquamation; if this be true, scarlet fever can never be restricted, to say nothing of eradicated, so long as desquamating patients are allowed to roam at will throughout the house and yard, or persons living in the infected area are permitted to leave the same upon the slightest pretext after having been in constant contact with the germs fifteen or twenty days. I have noticed that these cases are usually found in groups, and I have been diligently searching for the reasons. Careful examination failed to connect them with defective sanitation or squalid environments. On the contrary, many of these homes were ideal, while all were apparently free from germ-producing media, presuming that the same conditions which produce other germs are suitable for the development of scarlet fever; but I did find that children were allowed to play in the yard and climb on the neighbors' fences, and thus freely scatter desquamated cuticle, and in this manner it seems to have been distributed to the entire vicinity, probably by the wind, for in many localities four and five cases existed in adjacent houses.

The history and the duration of these cases seem to confirm my opinion as to the source of infection. For example: A boy of eight years contracted scarlet fever on September 10. His neighbor had two children who fourteen days before suffered from the disease. The attending physician had announced the cases recovered, but the sign had not been removed, as the children were found to be actively desquamating. The first child had no contact with his little neighbors, but had occasion to go into his own yard several times a day, always beating a hasty retreat if the desquamating children were visible. These children spent a large part of their time playing in this yard, as the physician had assured their parents that washing their hands with antiseptic soap would be all that was necessary to destroy the vitality of the germs, and yet this boy had as virulent a type of scarlet fever from the standpoint of desquamation as I ever witnessed, and I have the word of his parents that he had no contact except as stated above.

This is not an exceptional case, for I could give you many that seem to prove my assumption that the disease is spread in this manner, but that is not necessary. I believe you realize the importance of absolute isolation, for only in this way can the germs be corralled. When this is accomplished, formaldehyd will destroy them. Strict quarantine, careful isolation, thorough disinfection, and the hearty cooperation of the profession is the sum of the whole matter. Let the profession disseminate their knowledge until a healthy sentiment is produced in favor of the rules governing this disease. This done, the time is not far distant when scarlet fever will be eliminated from the category of human ills.

From the foregoing argument I draw the following suggestions which, I believe, if rigidly carried out, will eradicate scarlet fever:

(1) Every suspected case should be promptly isolated until the diagnosis can be positively confirmed.

(2) After confirmation, make isolation absolute, and report the case to the health department.

(3) Instruct the family to keep the patient isolated until all signs of pealing are invisible.

(4) All members of the family who desire to leave the house must do so the first day after their clothing has been disinfected. This will take six hours, as all their apparel must be placed in a sealed room and exposed to formaldehyd gas for at least that length of time to insure public safety, and they must remain away until quarantine is removed.

(5) No person should leave the infected area after fourteen days continuous exposure, unless the sick patient is free from desquamation.

(6) The attending physician should have as little contact as possible

with the patient; cleanse his hands thoroughly, and disinfect his clothing before entering another house.

(7) The character and duration of the isolation must be left to the Public Health Department. Thorough disinfection with formaldehyd, ten ounces to one thousand cubic feet, the germs having now been corralled, will destroy them and thus end the existence of the disease.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, NOVEMBER 13, 1901.

THE PRESIDENT, DELOS L. PARKER, M. D., IN THE CHAIR.
REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR GUY L. KIEFER read a paper entitled "The Relation of the Medical Profession to the Department of Public Health." (See page 498.)

DOCTOR JAMIESON: In regard to the free vaccination by the health board, I do not think that the general practicians made much objection to that. I believe that in times of epidemic the procedure that will effect the greater number of vaccinations quickly is the proper one to elect. I think that every six or seven years at least we ought to insist on a revaccination of all school children, but where on one or two occasions it has failed, then I think it is unnecessary, as I think there are persons who are nonsusceptible after one or two successful vaccinations. In regard to medical registration, I think the doctor's plan is correct.

DOCTOR DAVID INGLIS: As long as the profession are willing to lower the standard by endeavoring to make it easy, endeavoring to make arrangements for some person who is more or less with an infected person to go to work, we cannot say much to the laity if they try to evade the isolation. At present quarantine is conducted with great injustice to the people quarantined. The whole purpose of the quarantine is to protect, not the people in the house, but those outside the house. It does not seem to me that quarantine will ever be based on absolutely correct principles until the people who are imprisoned are paid for being imprisoned. I think that if laboring men were paid wages for isolation service there are very few of them who would not be willing to remain in quarantine.

DOCTOR THOMPSON: The sequelæ which follow scarlet fever are of a very serious nature, and should be considered in the treatment of this disease. Scarlet fever, of itself, is often regarded as not being a very serious disease, and, for that reason, very frequently the means employed to eradicate it are not rigidly enforced. The hospital, perhaps, is the greatest aid which the physician has in eradicating scarlet fever, simply because the isolation is perfect. There is no danger of spreading the disease to the surrounding district. There is a great deal of knowledge necessary to successfully cope with this disease, and this is not possessed by the laity in general; therefore, it is necessary in many cases to send the patient to the hospital. We find this trouble most frequent among the poorer classes, I think, simply because the isolation is less successful among them. As regards disinfection, not only the room, clothing, toys, books, letters, et cetera, should be disinfected, but it occurs to me that, perhaps, the house cat also might be a good thing to disinfect. The domestic animals are known to convey these germs as well as anything else. It also occurs to me that this disease, the same as bubonic plague, spreads by means of rats, and therefore, I would suggest plugging up all the rat holes in the room. The importance of this isolation has been brought to the attention of the laity by the doctor, but I do not think that the laity understand it—why it is that the patient cannot be about playing or attending to his duties, et cetera. It would seem that such a patient is hardly the one to keep isolated, but the laity should be taught that as long as such person is able to convey infection to other people the necessity for isolation should be made plain.

Doctor Chittick: It seems to me that a great responsibility devolves upon the medical profession regarding the danger of contagion in all these contagious diseases. The laity, of course, are not supposed to act on their own accord, but we have that responsibility thrust upon us, because we are supposed to know. There is a great deal of hardship sometimes, among cases, and the physician may hesitate where, for instance, a man's business is apt to be entirely destroyed. If the man who is the bread-earner were compensated, I think there would be more willingness on the part of the laity to obey. If a hardship be incurred by being isolated, then the cases should go to the hospital.

Doctor Schmalzriedt: The law provides that the health officer shall see that the quarantined do not suffer for the necessaries of life, and have nurses. Of course, that does not permit us to offer a man who has been quarantined his day's wages; it restricts us to the necessaries for people who are in need. It makes it very difficult at times to maintain a quarantine when we have put the wage-earner out of the house, a man who is earning a small wage, and compel him to pay board for himself and also to provide for his family. If we could possibly supply his family, or give him some compensation if he remained at home, the quarantine laws could be more effectively carried out, but this is a matter which cannot be remedied except by legislation.

Doctor Bennett: One point that I think might be discussed in connection with the relation of the Health Officer to the medical profession, and one means of preventing this disease, would be in aiding the general practician to make diagnoses of scarlet fever. I have seen the time when I would say, as for me I cannot make a diagnosis in some of the milder cases of scarlet fever positively. I would let it drop at that. After watching some of the very best men in the profession in the city I find that they are very many times at sea to know whether they have scarlet fever germs, measles, or some other slight rash due to various causes. I know positively that there are many cases in which no man can make a positive diagnosis. A help to the general practician is the fact that the Health Officer can step in at this time and aid him with his better knowledge of the disease and help to clear up the diagnosis. I think we ought not to hesitate for a moment to call the Health Officer in consultation in these cases. I believe that many cases are not reported for the reason that there are physicians who hesitate to admit that they cannot make a diagnosis in obscure cases. Another point, in regard to the medical registration, brought out by DOCTOR JAMIESON. I believe we cannot make a success of medical registration until it is put entirely in the hands of the Health Officer. At the present time if we know of a "quack" in our locality the only way we can get at him is by calling the attention of the prosecuting attorney to him, and in this way we are exposing ourselves. Many times quacks have the sympathy of the legal profession, and many times they are too lenient with them and let them go. If we could simply report the case to a Health Officer, and let him investigate the matter for himself and then report it to the prosecuting attorney, I think we could obtain better results.

DOCTOR WAGNER: I infer, from the report by DOCTOR KIEFER, that there is a lukewarm interest in the prosecuting attorney. If the family physician allows the patient to take the street car to go to the hospital, I do not think we can do very much to prevent scarlet fever from spreading.

DOCTOR AMBERG: It seems to me that if a man is quarantined he endures punishment for which he should receive compensation. DOCTOR KIEFER spoke of the relation of the medical profession to the Department of Public Health, and gave us some good advice. We have two of the medical profession in the Department of Public Health, and I think these two gentlemen could do a good deal for the medical profession and the public if they would practically unite. If the health board controls the lying-in hospitals why should it not look after all other hospitals?

DOCTOR WALKER: This matter of the State Board of Registration is one that will be brought to the attention of the profession of this city the coming year in regard to higher medical education. There is considerable correspondence going on now in regard to this matter, and there unquestionably will be brought up additional amendments to the present law regarding who shall enter the profession and who shall say that they shall enter the profession, both as to their literary qualifications previous to entering the college and after they get through, as to whether they are fit for practice. That subject is a very important one, and in its solution the State of Michigan should lend all practical aid to those gentlemen who comprise the State Board of Registration in Medicine.

DOCTOR SHURLY: As a remedy for a large number of cases that cannot be quarantined, I should suggest the cottage system of isolation for this city. There are many cases that could be sent to the hospitals, of children, if the mother were allowed to go to the hospital with the child. The city could equip a few cottages with what is necessary and allow the child and mother to be taken to these hospitals, and allow them to live in isolation in that way. It seems we have not got the cooperation of the public in the matter of isolation.

DOCTOR JENNINGS: The question of public vaccination seems to me to be one that the profession generally are agreed upon. The difficulty is not in smallpox; the community generally favors the restriction of smallpox by the most energetic efforts that the health department can put forward, but it is not educated up to the vigilance of equally severe restrictions in regard to some of the other contagious diseases. In regard to the question of scarlatina that has been brought up, and methods of transmission, particular stress was laid upon the communicability of the disease during the stage of desquamation. There can be no doubt that scarlatina is equally contagious during the period of desquamation, but that is not the most contagious period. The most contagious period is during the height of the fever. During the height of the rash it is at its highest point; during the desquamation it diminishes very rapidly. Its striking distance is so short that it is one of the most easily controlled of the contagious conditions. I was on the committee, I think, from the Detroit Medical and Library Association, that urged upon the Board of Health the necessity of adopting a regulation, and we reported, after a very thorough investigation of the subject, that a four weeks' quarantine was a wise thing in quarantining, and I think now that it is. There is no reason why quarantine should be prolonged three or four weeks, even though desquamation be repeated. I doubt if after this period a case of scarlet fever is contagious; that is, from the epidermal scales.

DOCTOR MCGRAW: In the *New York Sun* a little while ago there was described an interview with the Health Officer of New York, showing just what a community will do under certain circumstances. There in New York a Health Officer stated in this interview, "Whoever had smallpox would have to go over to the island and go into public wards and be treated for smallpox." It did not matter how gentle a lady had been bred or what she was willing to pay for. What the city was willing to give in that last epidemic of smallpox here was perfectly shameful.

DOCTOR FLINTERMANN: We ought to have a hospital for contagious diseases, and have it ready at all times, and have it absolutely complete and clean in every respect. Scarlet fever is one of the diseases which, by precautionary measures, could be prevented. In former years cases of scarlet fever were very frequent; cases wherein the diagnosis was correct. Since we have learned to operate without danger to the patients, learned to protect lying-in women, such cases of scarlet fever have become very rare. That would give us a clew to adopt measures in some ways as we would in cases wherein there are lying-in women.

DOCTOR KIEFER: In regard to paying quarantined people, certainly I am very much in favor of it; I think it would be well if we could put a premium on the quarantined. All those questions that require money to carry out, public mediums and public health measures, can never be accomplished until the profession stand together; until the public in general, and legislators and politicians know that the profession, as a whole, are demanding these things. In regard to consultation with the Health Officer, I do not think that DOCTOR BENNETT's remarks were intended to cut off any paid consultations on the part of the doctors who were, perhaps, more efficient than the Health Officer to make diagnosis of this kind; general practicians, and possibly specialists, who make a specialty of this kind of work, but, rather, in cases of the poor, where they would change physicians; where, perhaps, they will have a case of scarlet fever and will employ another physician, who will say that it is not a case of scarlet fever. I think it is the duty of the Board of Public Health to take the information of the first physician who saw the case. In regard to vaccine virus, it has always been the custom in the past to charge a price for the vaccine virus, which I have thought that particular price was excessive. The doctor could get it cheaper at an ordinary store where they sell vaccine virus. I should be very much in favor of giving out this vaccine virus free of charge. In regard to the lying-in hospitals and general hospitals. The lying-in hospitals have a law, and it is now being acted upon. The law is now that every lying-in hospital shall have an attending physician in each case. In regard to the general hospitals that may not be in proper sanitary condition, if DOCTOR AMBERG, who made that remark, will make a formal report to the Board of Health, they will look after the matter. In regard to cottages, as mentioned by DOCTOR SHURLY, it is the old question, but a matter of expense. I was a little disappointed at not having a vigorous response in the matter of registering physicians. I am not particularly anxious to proceed against the quacks and men who are not registered. It seems to me that that is another one of those questions where the isolation is with the one who does the prosecuting. He must know that the profession in the city of Detroit want the man prosecuted.

DOCTOR AMES: In reply to what DOCTOR INGLIS said, relative to compensating persons that were quarantined, I have been in the habit of trying to practice what I preach, and I introduced a bill into the legislature calling for compensation of three dollars a day for householders who were isolated. The legislature did not seem to think the same as I did. It seemed impossible to have the members of the legislature understand that the man was quarantined for the public good. I believe, with the Health Officer, that it is necessary to have a united medical profession get behind their representatives in every locality in the state, and have them promote a good measure, and thereby educate the people in the several communities, so that men will go to the legislature obliged to promote certain things for the public health.

REPORTS OF CASES.

PRACTICE OF THEODORE A. McGRAW, M. D., OF DETROIT.

ADENOMA OF THE RECTUM.

I WISH to show a specimen of tumor of the rectum, which illustrates well a class of neglected cases.

A woman, aged fifty-four years, began over a year ago to have mucopurulent discharges from the rectum, which caused her great annoyance. Occasionally the discharges were tinged with blood. There was no pain, nor tenesmus, but a feeling of weight and discomfort. This trouble increased and, about Christmas, 1900, she went to a so-called orificial surgeon, who examined her and ordered medicated enemata. She found, on attempting to take the enemata, that the rectum could be made to retain only a small quantity of fluid. Early in September, 1901, she came under the care of DOCTOR O. C. BROWN, who recognized the gravity of her case, and brought her to me.

On examination I found, as high up as the finger could reach, a spongy mass, partially occluding the rectum. She told me that she had never had any great difficulty in voiding feces, but had suffered from mucopurulent discharges. She was very anemic and thin, and very illy suited for a serious operation. I operated on September 21 by a posterior incision. I removed the coccyx, and cut through the right sacro-sciatic ligaments. This gave free access to the tumor. I removed about six inches of the rectum in mass, and afterwards cut away from each end fully an inch more. I also removed a mass of swollen glands lying behind the rectum. I found it impossible to bring the upper end down without detaching it extensively, but was able to bring the lower portion up. I inserted the upper end into the lower, and fastened it there with silk and catgut stitches. The wound was packed with gauze and left open. I did not interfere with the sphincter ani, neither cutting nor stretching it. She was so weak and exhausted that, though she lost very little blood, it was a question whether we should get her alive off the table. She was revived, however, by hypodermic injections of strychnine and digitalis and normal saline solutions.

It is now twenty-five days since the operation. On the fourth and sixth days there was a very slight discharge of feces from the wound. Since then her evacuations have been through the anus. The wound is nearly healed. I examined the rectum yesterday with the finger and found a perfect union. DOCTOR HICKEY pronounced the disease, after microscopic examination, to be a malignant adenoma. It is in just this class of cases that we may hope for a permanent cure, if they are taken early.

An adenoma in its first stages is a comparatively innocent tumor. It acquires a malignant character as it grows in age. In that case, ten months of valuable time were lost, because the so-called rectal specialist, to whom the patient went in December, 1900, was not equal to the occasion. Had the operation been performed then, the removal of a small segment of the bowel might have permanently cured the trouble. As it is, notwithstanding the present success, the ultimate prognosis must be considered doubtful.

PRACTICE OF J. HENRY CARSTENS, M. D., OF DETROIT.

REMOVAL OF NEPHRITIC CALCULI.

A WOMAN, aged thirty-eight years. I had operated on this patient some years ago for pus-tube. She had excruciating, colicky pains in the left side, occurring at intervals, and requiring, when they occurred, large doses of morphin. I made a diagnosis of stone in the kidney. She agreed to an exploratory operation.

With the usual preparations, the patient on a hard pad on the right side, so as to bend the body and throw up the region of the left kidney, I cut down from the crest of the ilium upwards to the ribs. I made the incision in this case at the outer edge of the quadratus lumborum until I reached the postperitoneal fat. Inserting two fingers, I could feel the kidney and readily detect the stone. By pulling the ureter and pelvis of the kidney towards the opening, I had no trouble in making a small incision in the pelvis of the kidney and taking out the stone. I carefully closed the incision with a double row of dry sterilized catgut sutures, and, for safety's sake, put in a small rubber drain. I closed the external incision also with a suture of catgut, including the skin. Patient made a splendid recovery and is entirely relieved of her former annoyance.

A TUMOR OF THE KIDNEY.

A WOMAN, aged thirty-nine years, had an immense tumor on the right side. The menopause was established four years ago. As it was a fluctuating tumor, starting from the region of the ovary upwards, I thought it was an ovarian tumor, adherent to the right side, as I have seen quite a few such cases.

Patient was prepared in the usual manner, August 29. I made the usual incision in the median line, and, while doing so, called attention to the nodular condition, and stated that there was a possibility of a fibroid with a long pedicle. When the abdomen was opened, no abnormal condition was found therein, as the tumor was back of the peritoneum. It was evidently the kidney. The median incision was closed, and an incision was made at the outer edge of the rectus from the ribs upwards, and the kidney gradually enucleated. As the adhesions were very firm, the peritoneum was again opened during this process, but closed with catgut. When the kidney was nearly enucleated, it ruptured and discharged an immense amount of pus, which, however, was sterile, as found by examination afterwards. Quite a number of stones were found in the kidney, which I here exhibit. There were seven altogether, some of which have since broken. It was now easy to remove the balance of the growth. The blood-vessels were ligated, and the incision was closed with catgut, except where a rubber drain was inserted. The patient was much emaciated, but made a very rapid recovery.

This case shows how difficult the diagnosis is in certain cases. The kidney, after its removal, completely filled a two-quart jar. More than one quart of pus must have escaped, so that the size of the original suppurating kidney was that of nearly a gallon measure. It can easily be seen how such large growths may erase all anatomical landmarks.

NORTHEASTERN DISTRICT MEDICAL SOCIETY OF MICHIGAN.

STATED MEETING, PORT HURON, JULY 25, 1901.

THE PRESIDENT, PHILLIP A. KNIGHT, M. D., IN THE CHAIR.
REPORTED BY A. HENRI COTÉ, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR **BART E. MCKENZIE**, of Toronto, Ontario, read a paper entitled "Club-foot." (See page 489.)

DOCTOR **ANGUS MCLEAN** (of Detroit): I have not much to say about the subject of club-foot, but I agree on a good many points with the gentleman who has read the paper, especially on his discussion of the open, or Phelps method. It seems to me that, in many cases, the Phelps method is extreme, as it appears unnecessary to make such a free gash, and cut away the tissues in such a free manner as PHELPS usually does, when we know that by the subcutaneous method certain tissues can be selected and severed and the same results finally reached. I would agree with the speaker in being conservative concerning the amount of cutting employed when correcting a deformed foot. Much good can be effected by manipulations and splints; it is scarcely necessary to remove any part of the bone. As has been demonstrated by the doctor, the employment of the Phelps method is frequently followed by contraction, in consequence of a vast amount of scar tissue. I am very much in favor of the subcutaneous method in connection with the continued use of splints.

DOCTOR **GREENSHIELDS** (of Romeo): In a case of ankylosis and twisted joint, in which there is no vertical motion, but lateral motion, how is it possible to straighten the foot without cutting the tendo Achillis or removing the cuboid?

DOCTOR J. C. WILSON (of Flint): I have been very greatly interested and instructed by the discussion, but I am somewhat forced into the position in which, as the boys say, "I do not know where I am at." It was my fortune, whether good or ill, to have a case of club-foot a few months ago. I was asked, as a general practician, by an expert in surgery, at what age to operate upon the club-foot of a child. I advised exactly as the doctor recommended in his paper, that the proper time, as I believed, was when the child would commence to walk. A telegram was sent to DOCTOR LAFERTÉ, of Detroit, asking his advice, and he replied that the sooner the child was sent to him the better. The child was taken to him and operated upon before it was four weeks old. The foot now seems to be perfectly corrected, but I do not know whether it will remain so. However, it places the general practician in a queer position, as it is now said that DOCTOR WILSON did not know what he was talking about when he advised waiting until the child was beginning to walk. I was acquainted with PROFESSOR SAYRE, of New York, and I had the privilege of listening to his talk perhaps earlier (as I am older) than the doctor, but the professor at one time, in a case in my own family, recommended that the operation should not be performed until the child was about a year old. About a year afterward we took the boy to DOCTOR BROWN, of Boston, and he said that it was a mistake that the child was not operated upon earlier.

DOCTOR FLAGLER (of Imlay City): I have been very much interested in the papers. The subject is of especial interest to me, as I have had charge of a case of club-foot, and I was embarrassed, as DOCTOR WILSON says general practicians usually are when they meet such a case. I supposed an early operation was necessary. I consulted DOCTOR MCCOLL, of Lapeer, and he advised otherwise, saying that careful manipulation would remedy the deformity. I followed his advice, and instructed the mother, as best I could, what to do. I think that probably she endeavored to manipulate the foot as well as she could under the circumstances, but having many duties to perform, she could not devote much time to it, and the results were not very satisfactory. I saw that very little was being accomplished in the way of a cure. I advised a plaster cast, and the child was brought to my office, and I endeavored to correct the foot by manipulations and the application of the plaster cast. Eight or ten casts were applied, and the deformity was being partially corrected. The parents lived quite a distance from my office, and did not come as often as I thought they should. I undertook to perform an operation, but the mother was very timid, and at the sight of blood begged me to desist, and I did. I did not make any further attempt to perform any operation, but advised the parents to take the child to Detroit and allow DOCTOR LAFERTÉ to operate upon it. The child is two years old, and the deformity is still uncorrected. I was surprised when the speaker offered an objection to the employment of the Phelps operation. If I am not mistaken, DOCTOR LAFERTÉ follows that method in his practice, and with good results. It is good results we are seeking. If they can be obtained by the Phelps operation, it seems to me that is certainly an admissible method. There may be a better one. The operation is easily performed, and does not require much skill, but some boldness, and it seems to me quite a feasible operation.

DOCTOR NEY (of Port Huron): I feel like apologizing for discussing a specialist's paper. However, I like to make history myself, and to operate in my own way. DOCTOR MCKENZIE speaks of stretching the muscles without cutting too freely. I suppose he refers to simply stretching the muscles until the resiliency has given way, then using the retentive apparatus and repeating the operations. I am inclined to think that much valuable time is wasted by that method. I believe it is better to operate boldly. Some physicians say that all good surgery is bold surgery, but I presume all bold surgery is not good surgery. When I see a physician operating timidly, I am inclined to think he will meet with disappointment. I think the general surgeon can be quite successful by performing operations boldly. Remove a wedge, if necessary. I believe in cutting the integument, facia, muscles, ligaments, and bones. I recall a case I operated on twelve or thirteen years ago. The Phelps method of operating was employed. Several times afterwards I made a subcutaneous operation, and the integument was torn so that it was one of the factors responsible for the position of the foot. I removed enough wedge-shaped bone to allow the foot to turn into the correct position. The operation did not interfere with the circulation, and the result is almost ideal. That boy walks and runs as fast as anybody. I think it is absolutely necessary that every case be treated on its own merits. I happened to take care of the mother of that child, and I instructed her in regard to hand pressure. The parents became discouraged with one foot, and ceased the manipulation of it. One foot was overcorrected by hand pressure, and it was not nearly so good as the one in which I made the clean incision. I do not think it is necessary to cut entirely across the foot, but simply cut down to the border of it, and, reaching in from there, all the structures that hold the foot in a false position may be severed. I operated upon another patient, in which the feet were turned almost directly backward, and the child is upon the streets every day with nearly as good feet as a normal person. Taking everything into consideration, I am very much pleased with DOCTOR MCKENZIE's paper, but, because all people are not able to obtain the services of a specialist, it is necessary that the general practician should not abandon these cases. I would cut away everything that resisted the replacement of the foot, whether it is skin, fascia, ligament, or bone, and overcorrect the deformity, because, if this is not done, three times out of five it will return again.

Doctor Knight (of Utica): I was formerly told—and I have done a great many things that I was told to do, for which I have afterwards been sorry—that the sooner an operation was performed, the sooner I sent my patient to a surgeon (for I do not profess to be a surgeon), the better it would be for the patient. I think the Lord will forgive me for all this rashness. As for the little patient, if he only knew how much suffering I have caused him, I do not believe he would. Any man who has attended mothers for fifty years, has met with a good many cases of club-foot. I do not think a surgical operation should be performed until the child begins to walk. In regard to manipulating the foot, that has been of immeasureable value to me in many cases. I have succeeded quite well in having the nurse and mother hold the foot in a corrected position when they carry the baby. When I hear medical men, like these here today, discuss the question of operation, and differ, it is no disparagement to the science of surgery, or to the men of different theories. Some farmers sow their wheat east and west, and some sow it north and south, and they all raise good grain. One surgeon performs a circular operation in amputating, and another a flap one, and they both obtain good results. Results are the great desideratum.

Doctor McKenzie (of Toronto): I will first express my appreciation of the kindness and courtesy of your association in asking me to present a paper today upon the subject of club-foot. I take it as a compliment that the Northeastern District Medical Society of Michigan should have extended this invitation to me. I have responded with a great deal of pleasure. I want to thank the individual members now for their candid criticisms of my remarks. Necessarily, in presenting so large a subject in so short a time, one must appear to be somewhat dogmatic. I am well aware that the statements I have made were made without qualification, which, some may think, should accompany said statements. If that is so, I must apologize; but I really do not wish to apologize, because the remarks which I made are the expressions of convictions that have been formed in the course of time. I think I may reply, very briefly, to the criticisms made, by referring to two things. I believe that you have expressed the correct practice, that the surgeon should not interfere in the manner in which surgeons usually interfere, until about the time when the child is able to walk. It would be well, I think, if the child never walked upon the crooked foot, but the work can be done within a very short time of the first year, or year and a half. Previous to that, the development of the foot and leg can be very greatly furthered by the plan which you have named; that is, the employment of massage and manipulation of the foot, by which means better muscles will be developed than in any other way. Admitting that the foot is corrected, as one gentleman said, within a few weeks after birth, being held in position by splints or braces, the foot cannot develop, as it could have done, without these restrictions. There is nothing gained, and something lost. In regard to the exception which I took to the Phelps operation, I would say that PHELPS and I are well acquainted and good friends. I meet him at his own table, and year after year at the Orthopedic Association. He well knows the position I take in this matter. He asked me not to take that position; that no person else had objected, and he would be glad if I did not do it. From that time to the present we have had that issue between us. I am more than pleased at the criticisms on my remarks. On one point I agree with the gentleman who entered chiefly upon the defense of the Phelps operation. I agree with him in saying that everything that stands in the way of correction, whether bone, tendon, facia, skin, or anything else, should be cut. However, I put in an "if," and upon that "if" I have the opportunity to express some ideas in variation with his remarks. The skin does stand in the way of the correction of the deformity, but who does not know that the skin is the most elastic of tissues? Even if you tear the skin, it is not a serious matter; but it is not necessary, and not being necessary to tear or cut it, I do not intend to do it again, unless something more mandatory appears in the case than I have hitherto encountered. He said that he thought an open operation was a saving of time. I would like to ask that gentleman and PHELPS, what is the usual time occupied from the beginning of their treatment until the patient is again upon his feet and walking about. The usual average time that elapses, from the beginning of treatment until the patient is able to walk, has been three months in a series of nearly thirty cases treated by our method. Patients that I treated by the open operation, did not get upon their feet any more readily, and, in extreme cases, not so soon, as patients treated by the other method. If one makes an open cut on the inner border of the foot, the cut should be made, as RIDLON makes it, as small as possible. Cutting should not be done simply for the sake of performing a brilliant operation. In the Phelps operations, an open wound is often made in which the lips of the wound gape two inches, and two inches in depth. Ask any physician how long it will take such a wound to granulate, so that the patient can walk. Taking everything into consideration, there is not much hope of restoring a patient to a normal condition in less than three months. Another objection is, that occasionally the lips of the wound slough. PHELPS advocates free cutting of the nerves and blood-vessels. I admit, at once, that the deformity cannot be corrected at one sitting. If an adult were brought upon the table today, I would correct the deformity in the most extreme case of club-foot, as far as subcutaneous tenotomy and fasiotomy, and the cutting of ligaments would permit of its being cut, and permit my hand to replace the foot without producing an open wound, and apply the dressings in such a way that, when the dressings are removed three or four weeks afterward, there would be no abrasions. How may that extent be learned? I do not know anyway to learn it except by experience. I will repeat some of the objections to the Phelps method. One is this, with a large wound there is more danger of those accidents that occur ocasionally from wounds that ought to be seldom, or never, present with aseptic surgery. That such accidents are infrequent is a credit to those who operate by the open method. Those who looked at the photograph of the young man about twenty years old, and compared the two feet, will recognize the fact that the foot operated upon by the Phelps method has contracted. There are hundreds of similar cases. Not only is there a contraction, but a large scar is quite frequently tender, and the foot and leg do not grow in proportion to the other foot and leg. It is a remarkable photograph, on account of the history it sets forth. That operation interfered materially, even at the age of ten years, with the development of that foot and leg. I could present a series of nearly thirty cases among patients from sixteen to forty-three years; a consecutive series wherein all cases, even the most obstinate, are included. No better series of twenty-six or twenty-eight cases can be produced, treated by any method in the world. These men, within two years, one of them about thirty-six years old, are walking so easily that the difficulty cannot be detected. One of them was in my office a few days ago. It has been about two years since the operation, and the man said he would not be in the condition he was in before treatment for fifty thousand dollars. I wish to heartily endorse what was said in a personal way; that is, personal to the victims. A person may be feeling that nature is not kind to him; may almost feel that Providence has selected him as an object of remark and observation. This man of thirty years of age said he felt as if he was just beginning to live, and that he was like other men. He had been made to feel his deformity financially. After obtaining a position, he went to begin work, but was told, "No, we cannot have you about in that condition." Another patient applied for a position in a college, sent his photograph and testimonials, and obtained the position. The man went to the college to take his chair, and was told by the principal of the college, which was a ladies' college, "I am exceedingly sorry, but I cannot have you about the college walking in that way." The foot never need be amputated. Every club-foot can be straightened. Upon this I assert myself dogmatically. Were we discussing hip disease, or white swelling of the knee, or any other condition into which disease entered, I would not thus speak dogmatically. I know that we cannot control disease, but must wait upon nature; but this is a matter of mechanics. Every congenital foot, if it were fifty years of age, can be straightened; and in the vast majority of cases, not only can be, but should be, straightened. I have not taken the position that I will never, in the future, remove bone or make any kind of incision, however large; I do not take that position; but I do say, that, in a series of nearly thirty cases, it has not been necessary. This I say, that I believe it to be unnecessary in all cases, no matter how large an area they may be drawn from, to remove bone from the foot, or to make the ordinary incision known as the Phelps open incision. Another point to which I take distinct exception is cutting the tendo Achillis as the first step in every case, whether child or adult. It is the wrong place to begin. It is a matter of mechanics. One or two questions were asked which, I think, have been answered in dealing with the general subject. One gentleman asked, how any such case as this could be brought into position without cutting the structures, or the tendo Achillis. When the structures are stretched they gradually yield. A tendon stretched a few days or weeks will be larger than before. It will stretch more readily the second time than the first. The bones slide around upon each other. These things have all been done. It is not often that it is wise to do that without cutting the tendo Achillis—no harm is done by cutting it—but I have seen feet which were practically corrected by manipulation by the mother.

DOCTOR NEY: I would like to ask DOCTOR MCKENZIE if DOCTOR PHELPS has abandoned his position?

DOCTOR MCKENZIE: No.

DOCTOR NEY: I never advocated the Phelps operation; I always thought it was unnecessary; but I do advocate the Ridlon operation, in which the cutting is not so radical. The doctor says he has seen the skin tear. If one continues these stretching procedures, and gives chloroform again and again, and his personality is strong enough to have these people come back to him again and again, he can continue the stretching until the resiliency of the muscles is abolished, even if he tears the skin. I am not strong enough, myself, to have the patients come back; so, for that reason, it is convenient to perform one operation and let them go about their business; therefore, in the large majority of cases, I obtain gratifying results.

DOCTOR MCKENZIE: The only point I wished to emphasize is, that I do not necessarily object to tearing the skin, if it is necessary.

DOCTOR NEY: Does not that mean a subsequent operation?

DOCTOR MCKENZIE: Several different operations.

REPORTS OF CASES.

PRACTICE OF OLIVER STEWART, M. D., OF PORT HURON.

FATAL PENETRATION OF THE RECTUM BY A STICK.

THIS stick caused the death of a little boy just a few days ago. I thought a report of the accident might probably be of some interest to the members of the society. The stick was laid upon a couple of uprights, and some little boys were jumping over it. The injured boy was about thirteen years of age. Somehow, in jumping over the stick, he struck one end of it, and came down upon it, and this end ran up his rectum eleven inches. There were no decided evidences of shock in this case, which was one of its peculiar characteristics. The stick must have penetrated the bowel behind the peritoneum, but there was no evidence of peritonitis at any time. The pulse ran up to about 130 for from twenty-four to thirty-six hours, then gradually went down, and on the seventh day the pulse was 76, with a temperature of 99.4°, and I thought the boy would probably recover. In the beginning of the treatment I put him under opiates. There was no hemorrhage whatever at the time he was hurt, but some pain, that was confined to the left side of the back, near the region of the left kidney. There was a little pain in the left leg at first, but not much. The lad was hurt on Wednesday, I think, and one week from the next Thursday night a hemorrhage from the bowel occurred. He had not been sitting up, but had been eating watermelon and drinking milk. The bowels had moved, and there was no blood in the feces at that time. About 7 o'clock that Thursday night he had quite a hemorrhage—not enough, really, to exsanguinate him—but enough to pale him a little, after which the pulse readily regained its former beat. The next morning at 4 o'clock he had a very sudden hemorrhage, which was followed by death. The fact that there was no peritonitis, and no symptoms of peritonitis, at any time, and the stick running up the rectum so far, is my only excuse for presenting the case to you. The mark on the stick is by measurement eleven inches. If any of you have any idea as to which was the vessel involved, and how the stick escaped the peritoneum, and how the boy could be so well on the seventh and eighth days, I would like to know. To me it was rather peculiar.

DISCUSSION.

DOCTOR NEY: I saw the boy, in consultation with DOCTOR STEWART. I have always had some regrets that an operation was not performed, and that delay was decided upon at first. The patient was doing pretty well, and there was no hemorrhage. We thought the bowel must be perforated, because a straight stick could not pass through the bowel without perforating it. I can hardly conceive of that stick following the intestinal tract eleven inches. I thought there would be peritonitis and we should operate; but there was no reaction, and then came the hemorrhage. Several of us at one time saw the boy. We thought we would operate. The hemorrhage of the bowels was arrested about 11 o'clock at night. We thought that the external iliac was wounded; that there was something which affected the internal coat; that a perforation of the bowel had remained open, and that the hemorrhage had made its exit through the rectum. Yet, when we think of it, it is very strange that he had escaped having peritonitis all that time. The wound must have been very low down to avoid peritonitis. I regret now that we did not take the chance of an operation at first. We thought we could delay until morning. I have regretted it since, because there was a fair pulse that night; but it was thought it would be an antemortem operation. It was a strange case, and I regret that DOCTOR STEWART was not successful in securing an autopsy.

EDITORIAL ARTICLES.

ON THE NEGRO QUESTION.

POLITICALLY speaking the negro question has been forever settled in this country. The *Memphis Scimitar* and other southern newspapers may wax ever so wroth over a common courtesy of PRESIDENT ROOSEVELT to BOOKER T. WASHINGTON, and HODGES may in a contrary strain declare with almost pathetic emphasis, that under civil freedom the colored race is being gradually crushed out, still our flag will never again wave over the head of a slave. Human progress has reached that point first in the American Republic.

The negro question has, however, more than one aspect. Considerations are here introduced which have never appeared in history before. The amalgamation of races has been observed since the dawn of history. It has been witnessed in this country, but not between whites and blacks. To be sure, occasional intermarriages between white and negro individuals have been seen, but general miscegenation is unknown, and, from present outlook, will never take place. Such an event might be looked for first in the South, where four-fifths of the colored race on this continent live and dominate with the white. Strange to state, however, it is in the south that it seems least likely to occur. There, negroes have always been looked upon and are still regarded as servants of the whites As a class they have not risen above that plane, and their mental powers do not appear capable of much greater advancement. Exceptional abilities are noted occasionally, but closer observation will usually refer them to the mulatto class. The great barrier to the mixing of the two races is the social inequality, which forty years of civil equality has been unable to break down. The North and South are unable to understand each other on this point. They never will until each has had time and opportunity to view the whole matter from the other's standpoint. Sober and unbiased opinions on this subject will be the outgrowth only of prolonged and more general intercourse between these two sections of this country.

Our negro population is increasing fast. In 1790 there were only 697,890 negro slaves in the United States. Now there are estimated to be nearly ten million. This phenomenal growth, which would arouse no great concern in any other class, strikes a certain degree of terror to some individuals, on account of the indifferent interests which makes the situation appear like a race for supremacy between white and black. This feeling seems, however, to be needlessly so intense. In an interesting address by J. ALLISON HODGES, on "The Effect of Freedom Upon the Physical and Psychological Development of the Negro,"*

* Annual address at the fifty-sixth meeting of the American Medico-Psychological Association.

significant reports are given, showing that while insanity and consumption were comparatively infrequent in the negro race before the war, both of these diseases have disproportionately increased in the race since the war. It is also unquestionably true that poverty and syphilis, which contribute so largely to the diseases aforementioned, predispose to a corresponding quota of other fatal maladies. In other words, the negro race has not shown itself able to cope with the Anglo-Saxon race in the natural struggle for the supremacy. It does not appear that a war of extermination, as has been suggested, will be necessary to the continued domination of the white race. Add to the shiftlessness and lawlessness of the negro his degenerate tendencies and you will have sufficient causes for the easy triumph of Teutonic blood.

THE SMALLPOX SITUATION.

THE expected has happened in the case of the present epidemic of smallpox. Notwithstanding the vigilance of the State Board of Health and the prompt attentions of the several local authorities, this disease has markedly increased with the advent of the winter season. According to the latest official bulletin, it has been reported at ninety-two places in Michigan during November, 1901, being at thirty-eight places more than in the preceding month. At the present writing it is stated to be unusually prevalent in certain mining districts of the Upper Peninsula.

There are three assignable reasons for the apparent failure to check its course. In the first place, the diagnosis of the true condition is often a matter of doubt. A differential diagnosis is not always promptly made between it and chickenpox, pustular syphiloderms, impetigo contagiosa, extensive papular and pustular drug affections, and the so-called "Cuban itch." In the next place, there is felt a false security on account of the mildness of the present type of the disease. So many affected patients are able to attend to their usual occupations, that an apathy exists as to revaccination. That the disease is to be dreaded is indicated, however, by the experience in New York City. According to SCHAMBERG, in "International Clinics," a mortality rate of nearly fifteen per cent followed a total of four hundred and seventy cases between December 1, 1899, and March 23, 1901, in that city. A third cause of inefficient control is the inertness of the vaccinating material supplied during the past three years. The writer has seen several cases of failure even in first vaccinations of children. How many cases of wrongly supposed immunity in adults from this cause, it is impossible to determine.

In an editorial in the *British Medical Journal* for November 16, 1901, reference is made to the "lymph supplied by a well-known firm," which, when used, was followed by no vesicles in the great majority of instances. Nevertheless, when the same cases were again vaccinated with another lymph, eleven out of twelve had well-marked vesicles as a result. Another correspondent is also quoted, who succeeded in forty-one out of forty-five cases with one lymph, but failed in fifty out of fifty-five cases with lymph from another source. These reports are, perhaps, unusual, but they indicate, what too many of us have already found out, that there is a quantity of useless vaccinating material on the market, The sorrowful experience of Camden, New Jersey, shows also that some of it is even dangerous in the extreme.

ANNOTATIONS.

MEDICAL LEGISLATION SECURED IN THE FACE OF DIFFICULTIES.

NOTWITHSTANDING the paradoxical appearance of doctors working against their own interests, it is a fact frequently repeated in history that not only is medical progress made, but also hygienic legislation secured through the tireless efforts of members of the medical profession and often in opposition to public sentiment. The truth of this statement has been recently illustrated in the enactment of an antispitting ordinance in New Orleans. According to a narrative by DOCTOR SCHEPPEGRELL, in the *Medical News* for November 23, 1901, he broached the idea in February to the Orleans Parish Society, which passed resolutions on the dangers of the spit-habit and the need for its control, and appointed DOCTORS SCHEPPEGRELL and STOREK a committee to urge municipal legislation. In March an ordinance covering the desired regulations came up and was passed by the Council, but vetoed by the Mayor on the ground that the part relating to sidewalks could not be enforced. The Mayor having promised to approve such a measure, with the sidewalk feature omitted, another ordinance was prepared and presented. The Committee on Law and Order, however, amended it by introducing clauses relating to sidewalks and *banquettes*. In order to secure the Mayor's approval, an attempt was made to have a minority report considered. This, however, the Council refused to allow. It passed the ordinance, together with the amendments, preferring to let the whole measure stand or fall on its merits. The friends of the measure could not now but have a gloomy view of the situation. The Mayor was consistently bound to veto the proposed legislation, and, besides, according to the narrator, all the local newspapers were decidedly opposed to it and fought it openly. Consequently, in order to move public opinion, there followed an interesting controversy, between the editors on the one side and DOCTOR SCHEPPEGRELL as the principal disputant on the other, until April 16, the date of final action by the Council. Happily, the doctor had so disposed his batteries and used his ammunition that, on that date, in spite of the veto, the ordinance became law by a vote of sixteen to four. As a direct result of the active interest of the local medical profession in hygienic matters, New Orleans has taken the same stand on the spitting nuisance that had previously been made by New York, San Francisco, and a dozen other large cities of this country.

RECENT PUBLICATIONS.

REVIEWS.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY.*

It is less than a year ago that the first edition of this work was noticed in this journal. The almost unabridged contents, within flexible compact covers, evidently created a demand beyond the anticipation of the publishers. In the second edition, we have the first carefully revised, together with about a hundred new medical terms. No purchaser of this dictionary could be disappointed.

* By W. A. Newman Dorland, A. M., M. D. W. B. Saunders & Company, Philadelphia and London, 1901.

PRACTICE OF MEDICINE.*

We Americans are neither too modest nor too jealous to acknowledge, and assert, if need be, genius in our own countrymen. On the other hand, we are not unduly prejudiced against the foreigner, and, as proof of this, we gladly commend the good qualities of this work. For convenience, it is divided into two parts, or volumes. Volume I treats of diseases of the circulatory, respiratory, digestive, and genitourinary organs, and of the nervous system. Under each heading the subject matter is systematically arranged, and the text is clean-cut, and, in its translated form at least, the style is not involved. It compares with other German books, as those of Hist and Fuchs, which are truly attractive to the reader. The present author stands preeminent in this special line of work. Volume II continues with a consideration of diseases of the nervous system, and treats also of diseases of the muscles, skin, spleen, and blood, of disorders of metabolism, and of infectious diseases. The subdivisions of the last-named part is unusual, but all the more pleasing. Authors on the practice of medicine seldom devote any attention nowadays to diseases of the skin, the venereal diseases, impotence and sterility in the male, and spermatorrhea, but this author writes like a specialist, even on these topics. The reader will be pleased with the concise, although exact and satisfying, style of the author, and with the attractive features of the printer's and bookbinder's arts as shown in these two volumes. This volume is separately indexed, and is also provided with a general index of both volumes.

* By Doctor Herman Eichhorst, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the University of Zurich. Translated and edited by Augustus A. Eshner, M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic. Two octavo volumes of over 600 pages each; over 150 illustrations. Philadelphia and London: W. B. Saunders & Company, 1901. Price, per set, Cloth, $6.00 net.

PHYSICIANS' VISITING LIST FOR 1902.*

THE fifty-one years' call for this little pocketbook attests its merit better than any other notice of its peculiar features.

* Published by P. Blakiston's Sons & Company, Philadelphia. Price $1.00 to $2.25, according to size.

PROCEEDINGS OF THE EIGHTH ANNUAL MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.*

THIS volume is in the nature of an annual publication, containing the minutes of the meeting, the constitution, and a register of officers and members of the association, but of more general interest are the thirty contributions to military surgery. Many of them deserve wider distribution.

* The Berlin Printing Company, Columbus, Ohio.

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION AT THE FIFTY-SIXTH ANNUAL MEETING.*

THIS volume contains the usual official reports, minutes of the meetings, and nearly thirty related addresses and papers. They are well worthy the perusal of any one interested in psychologic studies.

* Published by the American Medico-Psychological Association, C. B. Burr, M. D., Secretary, Flint, Michigan.

A SYSTEM OF PRACTICAL THERAPEUTICS.—VOLUME III.

THIS volume deals more especially with surgical topics. It consists of articles on anesthesia and anesthetics, surgical technique, the treatment of fractures and dislocations, minor surgery and bandaging, cerebral concussion and shock, pleural effusion and empyema, abscess and gangrene of the lung, peritonitis, nonoperative and postoperative appendicitis, paratyphlitic abscess, and obstruction of the bowels, obstruction of the intestines, diseases of the rectum and anus, therapeutics of the male genitourinary tract, therapeutics of the genitourinary diseases of women, the therapeutics of pregnancy, parturition and the puerperal state, diseases of the eye and their treatment by the general practician, diseases of the ear and their treatment by the general practician, diseases of the nasal chambers and associated functions, and on diseases of the uvula, the pharynx and larynx. The practical value of all three volumes must appeal to general practicians, if not to the specialists, and the eminence of the contributors insures the great value of the work.

* By Eminent American and Foreign Authorities. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics, Jefferson Medical College; Physician to Jefferson College Hospital, et cetera, Philadelphia. New (second) edition, thoroughly revised. In three very handsome octavo volumes, containing 2593 pages, with 427 engravings, and 26 full-page colored plates. Per volume, cloth, $5.00 net; half morocco, $7.00 net. Lea Brothers & Company, Publishers, Philadelphia and New York, 1901.

The Physician and Surgeon

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ORIGINAL CONTRIBUTIONS.

MEMOIRS.

THE LIGHT CURE IN LUPUS.

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PHOTOTHERAPY so-called, devised by DOCTOR NEILS FINSEN, of Copenhagen, is a system of applying sunlight in the treatment of diseases of the skin—particularly in lupus, the rodent ulcer form of epithelioma, and some other affections—which he believes more effective than Roentgen rays.

The use of light in the treatment of disease is not wholly new, though the method and technique are quite different from the simple sun baths behind blue glass windows first—in this country at least I think—brought into prominent notice thirty years ago or more by GENERAL PLEASANTON, a famous cavalry commander during the civil war. The application of the treatment was not limited to tuberculous disease.

We all know the effects of light and shade on plant life as well as on animal life. The woodman finds his way, in the absence of compass when the sun cannot be seen, by the lichen moss on the shady side of trees. Most of the outdoor plans of treatment include sunlight. It is neither unscientific nor unreasonable that the sun, the popular source of light and heat and power, should also have healing in its rays or that its transmuted electric beams should have the same miraculous effect. These might have been among the "more things in heaven and earth than were dreamed of in the philosophy of Horatius." This naturally follows the X-ray in the treatment of diseases of the skin. This beautiful conception of faith in the provision in the great alchemy of nature to cure the ills of life is more rational than many others with which the credulous, sanguine patient often diverts himself, while he gets well either under intelligent treatment—sanitary, hygienic, or medicinal, or dies from irremedial causes. A year ago a department was organized in the London Hospital for the treatment of lupus and other diseases of the skin by the methods of PROFESSOR FINSEN, the apparatus used being substantially the same as that employed by the Danish professor. Sun or electric light is passed through hollow lenses containing solutions which absorb the caloric rays. The ultra violet or chemical rays are focussed on the affected part which is rendered anemic by pressure by glass compress. These rays have been shown to have considerable bactericidal power. The skin is cleansed, the diseased area outlined and covered by a piece of moist lint, with a hole corresponding to the extent of surface to be treated at one time—about three-fifths of an inch in diameter. The duration of the treatment varies, averaging about an hour. The parts are then dressed with carbolized zinc ointment. There is no immediate redness, swelling, or pain, but after from six to twelve hours redness and swelling occur, and after twenty-four hours bullæ often form and serous oozing but rarely pustulation occurs. If the area is large the periphery is first attacked with a circle of rings carried concentrically inward. The tubercle bacilli are destroyed but the healthy skin is not injured. The treatment may need to be repeated daily for months.

FINSEN has also treated alopecia with the chemical rays of light and obtained good results. The report does not indicate whether alopecia was due to parasitic origin. Conversely DOCTOR WILLIAM ALLEN PUSEY, who has done much creditable work with X-rays in the treatment of various diseases of the skin, and has published various contributions to the literature of the subject, following the investigations of FREUND and SCHIFF in the use of X-rays for the removal of superfluous hair based on the facts previously shown by BERTHELMY and DARIÉN, states that the X-rays tended to produce atrophy of epithelial tissues. DOCTOR PUSEY also states as his belief—an opinion I have heretofore expressed—that the active rays among the X-rays if not identical are at least so similar in all their properties as to be practically identical with the rays at and beyond the violet end of the spectrum and if this is true this method of treatment—by the X-ray—is identical in principal with that of FINSEN.

DOCTORS MALCOLM MORRIS and S. ERNEST DORE report their experience with the light treatment in lupus and rodent ulcer, giving some further details of technique in the use of the electric light. A current of seventy-five amperes and sixty volts is usually sufficient. The crusts if any should be removed, the parts cleansed with boric acid or other antiseptic solution—ether if the surface is greasy, and the part to be treated marked with a blue pencil. The lenses must be clean and bright and the water free from floating particles. The rays should fall perpendicularly on the compressing glass, which should be held in place by elastic bands.

The resulting reaction varies somewhat with the idiosyncrasy of the patient. The time of its appearance varies from five to twenty-four hours. It is usually slight at first becoming more marked later, and the duration of the sore from primary hyperemia to complete healing is from ten days to a fortnight. When situated over loose tissue, as the eyelids, there may be considerable swelling from the treatment. Lupus vulgaris is the disease most amenable. In some cases one application is sufficient to cause the disappearance of a small isolated superficial nodule. Generally in cases in which extensive area is covered a new spot is treated each day, and the parts first treated are sufficiently healed in a few days to have treatment repeated. In cases in which there is extensive disease the treatment may have to be continued a year or more. When there is much thickening of the skin pyrogallic acid ointment quickens the action. In rodent ulcer the healing often follows quickly after the application. In lupus erythematosus the effects have been marked though not so certain as in lupus vulgaris. Constitutional effects are practically nil. The unfavorable conditions are those which hinder the penetration of light, such as scarring, pigmentation, great vascularity, great depth of the disease below the surface, and the situation of the disease in a position to make the application difficult or inaccessible. In very extensive disease the condition is unfavorable both on account of the long duration of treatment and the possibility of its spreading in one direction while another is being treated. Cases are favorable when the disease is limited, not spreading, and has undergone no previous treatment. The advantages of the method are reliability, painlessness, excellent cosmetic results, less liability to relapse, and avoidance of surgery. The disadvantages are the small area treated at one time, long time required, and the expense.

FINSEN discusses the subject in a report from his institute reaching the following conclusions:

(1) I have confirmed the results of MEDMARK's researches on the action of light upon the skin, and further proved that the visible chemical rays have also the power to produce specific photochemical inflammation of the skin.

(2) I have shown that in the electric light the strongest bactericidal power resides in the ultra violet rays and as a practical conclusion it follows that quartz lenses ought exclusively to be used in electric light concentrating apparatus; and this alteration (from glass lenses) has immensely advanced the treatment with concentrated light.

(3) I have pointed out that the dilatation of cutaneous vessels produced by the chemical (ultra violet) rays is of considerable duration, and it has even been possible to show this about half a year after the light's action.

(4) Comparison of the different factors acting on the skin has shown that the normal reddish color which the skin acquires when uncovered seems if not exclusively certainly for the most part to be produced by the

chemical rays; its occurrence seems to be retarded by heat and promoted by cold.

Finsen thinks that not only the pigmentation, but the chronic redness of the skin, indicating an abundant blood supply to the skin following are among the chief results of the light and that we are entitled to presume that the skin is better nourished and more able to perform its functions—though he admits we do not know what these functions are—and not until we have a definite knowledge of these functions will the importance and value of the action of light on the skin be clear. He states that: "At the Light Institute we have for some time past, but principally with other objects in view, tried the therapeutic use of photochemical light baths (sun baths, electric light baths). Our experience has, however, been very limited up to the present time, and we are not yet out of the experimental stage. This very conservative summary of his investigations will impress the reader with his sincerity. Whether curative effects are due to the bactericidal power of rays, or to improved nutrition of the skin, or to both is still an open question. It will be noticed, however, especially in the report of the clinical trials by Morris and Dore, that the cases in which the light treatment was most successful, were the separate small shallow lesions of recent formation, precisely the kind of lesion that is so satisfactorily treated in lupus by curetting and cauterization, or in epitheliomata by the same means or by excision. The method of treatment while interesting and curious has not been sufficiently tested as yet, and especially in cases not amenable to other satisfactory plans of treatment. It is to be hoped that further trial and investigation will not only make clearer its therapeutic action but also demonstrate its applicability to a wider range of cases, with greater simplicity, less expense, and perhaps less time. The profession will await with much interest further investigation and developments, hoping that the action of the actinic light rays will prove a valuable addition to the treatment of diseases of the skin.

Since this paper was written many interesting contributions to the "light treatment" have been made, among them a valuable article by Doctor August Ravogli of Cincinnati. Various modifications of Finsen's apparatus have been introduced, and there is danger that the method may suffer disparagement by efforts of inexperienced operators, imperfect apparatus, and attempts to apply the treatment to inappropriate cases. One of the best outfits for the treatment (and one which has received the commendation of Ravogli and other eminent dermatologists) is manufactured at Lyons, France. Numerous cases of lupus, superficial epithelioma and some other forms of superficial disease have been treated with varying success in the skin clinic at the University Hospital during the past three or four years. A large flat keloid treated within a year showed marked improvement. It is expected that the Lyons apparatus will soon be added to the present equipment in the hospital.

A STUDY IN OBSTETRICS.*

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Tarnier writes, in his preface to the sixth French edition of "Theory and Practice of Obstetrics," by Cazeaux and Tarnier, issued 1886: "A classical book soon grows old in these days . . . by the progress of science."

A cursory comparison of the most recent text-books upon obstetrics with those issued a half century ago is sufficient to reveal the fact that, excepting anesthesia, asepsis and antisepsis, midwifery has made but little progress. It would seem that midwifery has yielded to her sister, gynecology, a large measure of her popularity. The accoucheur possessing a national reputation gained without aid from his gynecologic work is, indeed, rare at the beginning of the twentieth century. Yet, withal, midwifery is, perhaps, more advanced toward scientific perfection than any other branch of medicine. There is no department of medicine that answers more truly to the technical definition of a science than does obstetrics. Its mathematical and mechanical essentials are ever present in the estimation of the forces of expulsion and resistance.

The chemistry of asepsis and antisepsis as demonstrated by Semmelweis, Lister and others, must be known and practiced. The therapeutic agents employed in midwifery are those of definite physiologic action, consisting usually of an anesthetic, vasomotor stimulant, antiseptic and oxytocic.

Obstetric work can be at the same time the most exacting and the most indifferent of work. If the forces of expulsion and resistance are equal, or resistance greater than expulsion, the obstetrician is brought face to face with conditions which will command skill, ingenuity and courage. If nature is able to accomplish her work unaided, the medical attendant is little more than a spectator who will require remuneration only for his time and good judgment, his chief responsibility being that of noninterference.

The principles of asepsis and antisepsis are never more valuable than in the practice of obstetrics, when upwards of ten per cent. of all women confined can be saved from death by sepsis if rigid asepsis is observed.

A case of labor commands of its attendant, first, intelligent assistance; second, intelligent noninterference; third, rigid asepsis. The intent of this essay is to deal with some features in the physiology and management of labor.

The interest of a physician in any particular line of work is commensurate with his success therein, but there are always essentials which precede efficiency. A record of cases carefully kept must afford a stimulus to better work and create a deeper interest. The form outlined by JEWETT[1] which provides for history, antepartum examination, abdominal examination, vaginal examination, labor, subsequent history and condition on dismissal,—this, with the subheads gives an admirable outline for practical record-keeping.

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*Read before the Detroit Medical Society.

The physiology and mechanism of labor should be studied together. HIRST[2] defines labor as "that natural process by which the female expels from the uterus and vagina the ovum at its period of full maturity, which is reached; on the average, two hundred and eighty days after the first day of the last menstruation. The process is divided into three main stages or acts. The expansion of the birth-canal, the expulsion of the fetus, and the delivery of the remainder of the ovum." JEWETT[3] very tersely describes three factors which are concerned in the mechanism of labor: (1) The expelling powers; (2) the passages; (3) the passenger. LUSK[4] says: "The mechanism of labor comprehends the movements of adjustment by means of which the fetus accommodates itself to the dimensions of the bony pelvis and to the variations in the direction of the parturient canal."

The armamentarium required for the scientific conduct of a case of obstetrics is not only a well equipped obstetric bag, but a vivid and practical knowledge of the pelvic anatomy, and a clear understanding of the physiologic process and mechanism of normal labor. A case of labor should be carefully and closely studied, with the thought in mind of anticipating nature's physiologic and mechanical requirements. The chief expelling power is the contraction of the muscular walls of the upper uterine segment. The control of these contractions is by the sympathetic system, but voluntary influences may exert a most marked control, either strengthening or enfeebling their force. A practical lesson can be drawn from the foregoing fact. The patient should be instructed and helped to use the proper control of her pains. The primipara may be taught to strengthen her pains by volition.

The uterine contractions in the lower segment are the sole means for dilation of that part. When dilatation is complete the holding of the breath, fixing of the diaphragm, and contracting of the abdominal muscles adds materially to the expellant force.

The parturient canal consists essentially of the uterus, the soft parts of the pelvis, and the pelvic floor. The upper, or contractile, portion of the uterus is of importance in furnishing propelling power, while the lower segment is engaged in the early stage of labor in resistance to the expelling force. The soft parts of the pelvis, excepting the bladder and the rectum, are of little interest beyond the fact that they are the lining of the bony pelvis, the dimensions of which, in relation to the size of the fetus, determines so much toward normal and abnornal labors. It seems almost necessary to say that the bladder, if not empty, will be an obstructing force to the parturient canal. It is always wise to determine for yourself if the bladder is empty. A case in the practice of the writer will serve to emphasize the importance of being sure that this organ has been emptied.

A woman was attended in labor from the second stage. She was in good condition and the presentation normal. The progress was good until about one-half of the head had entered the brim, when it became so slow that chloroform was given and a forceps delivery performed with but little trouble. The nurse was questioned about the patient having passed urine, and the reply given was that it had been passed freely twice during the last hour. About two hours after the delivery a message was received that the patient was in convulsions; by the time I arrived she had had three spasmodic seizures, which were quite typical of eclampsia. Upon examination of the abdomen the bladder was found largely distended- The urine was quickly drawn, and relief came immediately.

The rectum, when distended, occupies part of the pelvic space along the anterior surface of the sacrum and coccyx. It is an aid in the progress of labor, a comfort to the patient and a help in asepsis to have the rectum empted by enemata.

The pelvic floor is of importance both as a propelling and resisting force. The injuries sustained by these parts are much too frequent, and greater care with better skill is greatly demanded for the patient's welfare and accoucheur's reputation.

The conduct of a case of labor involves the responsibility of most careful asepsis and antisepsis. The uncertainty of what may be demanded in the way of interference should compel the most rigid preparation at the outset of every case. The most humble home will be able to supply hot water and, quite likely, soap, or perhaps mustard[5] which is but little inferior to bichlorid of mercury and very much superior to carbolic acid in germicidal power. A most convenient and effectual means for disinfection of the hands and the external parts of the patient is the use of mercuric iodid soap. This can be used also for rapid disinfection of instruments.

The use of lard, vaseline or glycerine which has not been sterilized, for lubricating the examining finger, should be strongly condemned. Soap is the safest of lubricants; the crevices of the finger nails on the examining hand should be filled with soap. It is of little use to carefully prepare the examining hand and not the external parts of the patient. To ignore asepsis and antisepsis in midwifery is to ignore the most important progress made in this science during the past half century.

Anesthesia in obstetrics is the second most important advance in this science during recent years. An anesthetic can be given with almost absolute safety in nearly every case of obstetrics. HALBERSTADT[6] affirms that "in thousands of administrations only two cases of death are alleged to have occurred; even these two cases are so questionable that no one has ever been able to trace them to a reliable source." The same writer says that "in no instance has he seen narcosis of the child attributable to the anesthesia."

In the author's subjoined analysis of one hundred and fifty deliveries, chloroform was administered in seventy-one per cent of the cases without any untoward symptoms or sequelæ. In many instances the administration was by untrained assistants. HIRST[7] names three signs which indicate that labor has actually begun: (1) Recurrent pains of characteristic duration, situation and nature; (2) the escape of a small quantity of blood-tinged mucus from the vagina; and (3) the dilatation of the os.

A careful examination of the patient should reveal: (1) the general condition; (2) the position of the fetus; (3) the fact whether labor has commenced.

The patient should be urged to walk or sit up during the first stage, unless there is some contraindication, thereby stimulating pains. The bag of waters should not be ruptured until the beginning of the second stage. The head of the fetus or the hand of the accoucheur is a poor substitute for this perfect hydrostatic dilator. In primiparæ, rupturing should be left in nearly every instance to nature.

In a simple case of labor the frequent mistake is made after the head has been born of forcibly pulling upon the head in order to quickly deliver the body. The result usually follows that the shoulder, which is crowded firmly on the pelvic floor, is drawn forward so as to act like a wedge against the distended perineum, causing it to easily tear. The purple appearance of the child's face is not a true cause for haste and alarm, unless the cord is around the neck. Attention should be given to the shoulder and the perineum while the natural expelling powers will soon complete delivery. The majority of ruptured perineums observed by the writer have been caused by the shoulder.

Rupture of the perineum caused by the head can frequently be saved by directing pressure upon the part of the head adjacent to the fourchette directly backwards, causing the occipito-frontal diameter to tilt at an angle of perhaps forty-five degrees with the plane of the outlet, thereby lessening the greatest diameter presenting.

The use of forceps is, to say the least, a much debated question. One extremist will advise that it is always best to leave them locked up at the office, while another will advocate their application in every case but precipitate labors. The safe medium is well expressed by DOCTOR MARX[8] in the following: "The obstetric forceps is a powerful and a dangerous instrument in the hands of the inexpert, while in the hands of those who know its application and use as applied according to the well-known principles of the mechanism of labor, it is the most conservative instrument placed in the hands of mankind, saving hours of untold misery and suffering by its timely and legitimate and skillful application. . . . I maintain it is not the instrument that is successful but the man behind the instrument, the brains, skill, and tact that guide the delivering hand to success."

Failure and injury from the use of forceps arises more often, perhaps, from their improper application than from any other cause. It should be constantly kept in mind that it is the head of a living child you are fitting steel blades upon, and that you will be required to supplement nature's expelling force with sufficient power to overcome the resistance of the passages which are ever liable to injury and from which your patient may suffer through many years.

DOCTOR MARX[9] makes this practical suggestion regarding direction in which force is to be exerted: "With the forceps applied in the usual manner and the handles tied together, allow the patient to have one good pain with the forceps in place. The direction the uninfluenced handles take by being pushed downward by the uterine contraction is the one which nature wishes us to follow primarily." The blades should be felt conforming to the part applied. In no instance should the blades be pressed together with much force. The very best mechanical ability is demanded often, in arriving at the means which will give the best application of the required force exerted in the direction of least resistance.

If the calculation that for every pound of pulling force there is a compression force upon the child's cranium of one-half pound is true, it must follow that the use of great force should be positively condemned.

Within the past month W. M. DRAKE and the writer were privileged to conduct an autopsy in the following interesting case of instrumental delivery. The following, rather brief, history was obtained: The mother had been some thirty-six hours in labor, the position was reported as normal and the pelvis of normal diameters. The child was well developed, the head being a little large and the occipito-frontal diameter rather long. Delivery was accomplished with forceps after great exertion by two stalwart men. The child was apparently lifeless, but, after persistent artificial respiration, it revived and lived for four days, during which time marked hemiplegic symptoms were constant. The autopsy showed an extensive hemorrhage (from a rupture of the posterior meningeal artery), which extended into the posterior fossa over the occipital, transverse, lateral and superior longitudinal sinuses, as far forward as the posterior fontanelle. An ounce or more of blood was found at the base of the cerebrum and cerebellum. No fracture in the cranial bones was found, though evidence of severe impingement at the lateral angle of the occipital bone was present.

The time when forceps should be applied is at times somewhat difficult to decide. DOCTOR MILNE MURRAY[10] enunciates the following aphorism: "Wait till you see what nature can effect, not what she can endure." DOCTOR SMYLY[11], of Dublin, gives the following rule: "Before it is allowable to use forceps the head should be presenting and partially engaged in the brim, the os should be dilated and the membranes should have ruptured."

The forceps should be removed (if not held too tightly by the tissues) before the head has cleared the perineum; by so doing the perineum will frequently be saved from rupture.

In the series of cases reported in this paper the writer used forceps sixty-three times without mishap to either mother or child. Forty cases were primiparæ of ages ranging from fourteen to forty-five years. The proper time for ligation of the placental cord is quite generally conceded to be when its pulsation has ceased. Only one ligation should be made, the placental end being left free to drain blood from the placenta, thus enabling the uterus to more easily separate and expel it. Very little, if any, force should be exerted in pulling upon the cord. The method of Credé in grasping the fundus with the fingers placed on the posterior side and the thumb in front and forcibly compressing and gently forcing downward when the pain has reached its height is the best procedure.

The following brief general analysis of one hundred and fifty consecutive obstetric deliveries is subjoined:

Multiparæ, 60: average age, 30.

Primiparæ, 90: average age, 21; minimum age, 14; maximum age, 45.

Presentations: podalic, 8, or 5.3 per cent, of which 6 were breech and 2 foot.

Presentations: cephalic, 142, or 94.77 per cent, of which 3 were occiput, 5 face, 143 vertex.

Deliveries: precipitate, 7.

Deliveries: instrumental, 63, of which 23 were in multiparæ and 40 in primiparæ.

Anesthesia: chloroform, 106.

Perineum lacerations: complete, 1; incomplete, 13.

Postpartum hemorrhage: twice.

Puerperal eclampsia: 14, once.

Twins: once.

Anatomical asymmetry of fetus: 1, complete cleft palate; 2, with supernumerary digits; 1, umbilical hernia with malformed penis and supernumerary digits; 1, unilateral thyroid gland, enlargement causing the contour of the gland to be even with the chin.

Fatality: mother, none.

Fatality: fetus, 2.

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831 FORT STREET WEST.

CONSERVATIVE TREATMENT OF EMERGENCY SURGICAL CASES.*

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BY emergency surgical cases I mean those in which prompt attention is demanded through either accident or acute infection. They include a variety of injuries—contused, punctured, incised, lacerated and gunshot wounds, burns and fractures—complicated by a greater or less degree of septic infection. In discussing this subject it is not my intention to particularize with reference to the treatment of all these conditions, but rather to consider it in the light of results—that is, from the standpoint of the patient. It was a saying long ago that the Frenchman cured the disease, but the Englishman cured the patient. The distinction implied in that witicism is the subject of this paper.

In the "Memoirs of AMBROISE PARÉ" there is related the case of the King of Navarre, who was wounded with a bullet in the shoulder. When asked if the wound were mortal, PARÉ said "yes, because all wounds of great joints, and especially contused wounds, were mortal, according to all those who had written about them." The surgical skill and sagacity of that great man were highly esteemed in his lifetime and the dictum he uttered, on the occasion referred to, may be taken as the *summum et bonum* of the science and the art of surgery of that time. Since then the perfection of surgical methods, and especially amputations, did much, even before the discovery of anesthesia or of the principle of asepsis, to modify the established practice. Bold measures — amputations — became the order of the day by reason of their conservative effect. During the last decades, however, the necessity for radical procedures has dissolved in the clearer and full appreciation of surgical principles. Amputation as a routine measure in the treatment of emergency cases, is now only a memory, and yet that it is even now too frequently and unnecessarily resorted to, I firmly believe. Cases are frequently met with which look at first exceedingly desperate, and to those not familiar with the possibilities of conservative methods, anything short of amputation seems like a waste of time and a lack of courage and surgical ability. I am not ignorant of the occasionally tedious healing of wounds, of the scars and contractures which sometimes result, and of the deformed and apparently useless members. I have seen these and still hold the opinion that amputation should be thought of only as a last resort. The saving of a foot, hand or arm is of far greater consideration than the petty annoyances which time and patient industry can usually overcome.

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* Read before the DETROIT ACADEMY OF MEDICINE.

T. M., a marine engineer, came under my care July 13, 1901, and told me the following story: On July 4 a cannon firecracker accidently exploded in his right hand, badly shattering and lacerating it. He was taken to the nearest marine hospital, given an anesthetic and the thumb and first three fingers amputated at the metacarpo-phalangeal joints. The father of the patient, also an engineer on the lakes, visited the surgeon and was told, he said, that if he had known who the man was he might have saved some more fingers. This case is pointed enough to convey, without further comment, the impression I desire.

From a number of cases I have selected four intrinsically interesting ones which exemplify to my mind the art of conservative surgery.

Case I.—D. F., about fifty years of age, was sent by a physician to Saint Mary's Hospital, August 6, 1901, to have one or two fingers amputated and the hand otherwise cared for. While employed as engineer in one of the downtown buildings his right hand became engaged somehow in the machinery, as a result of which the thumb, index and middle fingers were crushed, broken and lacerated. The ring finger was also contused and cut but not severely. The wounds were grimy, large and jagged and the bones dislocated and comminuted. It must be confessed that hardly anyone except the patient would have thought the fingers of any future use. However, the wounds were soaked in several solutions of mercuric bichlorid, freed from dirt and loose particles of bone, trimmed up, sutured in places, drained, the phalanges put in apposition, separate finger splints and a larger hand splint applied and the whole hand dressed. After forty-eight hours the dressings were changed by the hospital interne. The patient remained in the hospital four days and the hand was dressed for the last time August 31, twenty-five days after the receipt of the injury, at which time the hand, with the exception of stiffness of the joints and a slight twisting of the distal end of the middle finger, due to careless early dressing, was a very presentable member and promised great utility. Passive motion has since rendered the joints more nimble and the patient considers he has still a good hand.

Case II.—H. J. E., on August 24, 1900, had his whole right hand caught and squeezed between heavy rollers of printing machinery. He was soon in my office but even in so short a time the hand was swollen to twice its normal thickness. The thumb and fingers were split open in several places, chunks of muscle protruded and considerable portions had to be cut off, and crepitations could be felt in different parts of the fingers and among the metacarpal bones: The hand looked as though it might be saved from serious septic infection but the injury was so great that muscular function in every part of the hand seemed irreparably lost. It seemed inevitable that tendon and sheath should be permanently adherent to one another. The hand was trimmed up and antiseptically dressed in splints and redressed from time to time during the next two months. Passive motion was begun between the second and third week and persisted in throughout the treatment. There was some contracture of the fingers and hand and contrary passive motion used as indicated. When last seen the hand was not of great use but the young man could hold a pen in it and the outlook justified the treatment.

Case III.—W. B., aged seventeen, while switching for the street railway fell on the night of November 26, 1901, in such a manner that a car wheel passed over the lower third of his right forearm. Skin and muscles were severely crushed and torn by the great weight, both bones fractured in comminuted form, dislocated, crushed and protruded from the wounds. A young surgeon who first saw the patient considered amputation as the only practicable method of treatment. The wounds were exceedingly dirty and acute sepsis seemed inevitable. As the family attendant I dressed the arm in the usual manner, using antiseptic solutions, sutures and splints as seemed to be indicated. The fragments of the radius were with considerable difficulty replaced and it seemed quite uncertain whether they could be retained in position. Anodynes were given and an ice bag ordered for immediate and constant use. Owing to the great swelling the edges of the skin could not be brought together at the first dressing. On the following day the dressings had become saturated and were changed. The bones seemed to be in proper relation but the arm had become more swollen so that all sutures had to be removed and the wound left entirely open. Drainage with gauze was provided from extensor to flexor surface. Temperature and pulse indicated sepsis and a second ice bag was ordered. The skin involved in the injury promised to slough, the hand and entire forearm were inflamed and pain was felt in the axilla. The arm was dressed daily and within ten days both ice bags were discontinued. The skin sloughed on the extensor surface over an area of about twelve square inches and over an area of eight square inches on the flexor surface. A large surface of the radius was at first exposed but at this date it is nearly covered. Skin-grafting was performed twice and the granulating surface is now pretty well covered over with good skin. The forearm is still enlarged. Phalangeal, metacarpal and wrist joints can now be moved passively and there is slight voluntary control of the fingers and thumb. The treatment has been much more troublesome than it would have been by the method of amputation, but the results to the patient cannot be compared, for there is a certain promise of not only a whole but a useful arm and hand.

Case IV.—Miss M. V., twenty-four years of age, was admitted to Saint Mary's Hospital, February 7, 1899, with history and condition as follows: While engaged in laundry work, her left arm was caught in the gearing of a machine, by which all the soft tissues were torn from the humerus along the middle half of its anterior, inner and posterior surfaces. The integument of this region was chewed up and completely destroyed. Only a strip one and one-half inches wide was left on outer side of arm. The biceps, coraco-brachialis and brachialis anticus were lifted in part, the triceps was torn up and completely severed, the musculo-spiral and several smaller nerves divided, the median basilic and several other blood-vessels were torn into and their ragged ends hung in the wound. The brachial artery lay exposed, having been scraped by the machine but fortunately not divided by it.

I have scarcely seen a more hopeless condition than that arm presented, and had it not been that the brachial artery was still intact and that a feeble radial pulse could be felt I should have thought it little use to try to save the arm. The greasy bits of skin were snipped off, the muscles trimmed, the triceps sutured with long mattress sutures, blood-vessels ligated, the larger divided nerves sutured as well as possible, the healthy skin stretched and sutured to cover as much of the exposed surface as seemed prudent, the wound cleansed, dressed, and long straight splints applied to prevent tension on the sutured muscles and nerves. During the first twelve hours following this operation there was profound shock, and dark brown vomit, for which stimulants were administered hypodermically and normal saline solution repeatedly by enema. The wound was antiseptically dressed daily, for some time. Skin-grafting was performed three times, more than two hundred pieces having been used by Reverdin's method. The patient continued under my care until May 9, or about three months after the injury was received. At that time the arm was healed, contracture was inconsiderable in proportion to the wound, and by passive motion the several joints involved were gradually being loosened up. During the month of May the patient returned to work.

The foregoing cases exemplify conditions on account of which amputations are being made of fingers, hands and arms, and they demonstrate what I mean by conservative surgery. No one of the patients ever expressed dissatisfaction or had reason to be other than grateful for the result. In the treatment of them, repair and the normal relations of structures, drainage, the avoidance of excessive cicatricial tissue, the preservation of joint and muscle function, and the healthy condition of the body generally were the main indications. The application of cold in the forms o solutions and of ice was of great service in arresting septic processes. Gutta percha tissue is in my opinion the least injurious protective dressing for granulating surfaces. Powders were generally discarded. As soon as the wounds became clean, irritating antiseptic solutions were displaced by mild antiseptics or sterile water. Passive motion of the affected joints was begun early according to their injury and patients were made to feel responsible for their share in this part of the treatment. Fingers, hands, wrists, arms, feet and legs frequently become tightly anchylosed following serious injuries but patience and persistence will seldom fail in bringing about a good result.

THE LAWS OF MICHIGAN RELATIVE TO PUBLIC HEALTH.*

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I BELIEVE "The Laws of Michigan Relative to Public Health" are the most important of any in our statute books. I also believe that the business of the health officers is more important than that of any other set of men in the State, and, I might add with truth, that failure to attend to this business properly and efficiently may entail more harm upon the community than a disregard of duty by any other class of officials.

The health officer's charge is "the greatest thing in the world," the care of the health of the people. It is greater than wealth, or property, or any other rights, and possibly even than life itself; because life without health has lost most of its value and much of its joy, and it is of short duration at the best. It is for this reason that "The Laws of Michigan Relative to Public Health" give to the health officials larger and more absolute powers than are conferred upon any other class of public officers. And it is by the *tactful* exercise of these great powers, and the vigilant discharge of their important duties, that the health officers, more than any other class, may advance the public weal. I use the word "tactful" advisedly, because willing and intelligent cooperation is what the health officer most needs in order to make his work the most effective. While his duties are in the main executive, he should also, as it seems to me, strive to make his work educational. Though he has power to drive by force, he will accomplish more by leading through intelligence.

In no other department of human affairs does it seem that education will accomplish so much. It will, in large measure, do away with the necessity for coercive measures, and render resort to legal methods largely unnecessary. The ends to be attained by sanitation and preventive medicine are so paramount, and the results of neglect are so direful, that mere enlightenment will go far towards securing that willing and earnest cooperation which is essential to the best success of the health officer's work.

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*Abstract of a paper prepared for the CONFERENCE OF HEALTH OFFICERS which was held at Ann Arbor, November 21 and 22, 1901.

For this reason I have sometimes thought it would be well if health officers were made members of Boards of Education in their respective localities, to the end that they be in position to see that the law requiring that "There be taught in every public school in Michigan the principal modes by which each of the dangerous communicable diseases are spread, and the best methods for the restriction and prevention of such diseases" is faithfully carried out.

I may be misinformed, but I have reason to fear that, notwithstanding the great progress that has been made since this most salutary law was enacted, it is still somewhat lightly regarded by some of the academicians and educational boards who prepare the curriculums of study in our public schools. If health officers were ex-officio members of these boards, might they not more effectually advance this work? If it is thought unwise thus to add to the duties of health officers, might it not still be wise to require them to urge compliance with this act by school boards, and require them to report to the local or State Board of Health all cases where the act is ignored in the preparation of curriculums of study? Once the course of study is laid out without including this subject, the individual teacher becomes almost powerless to correct it, and to carry out the law which is laid upon him.

I especially urge this thought because of my belief that, were the spirit of this law faithfully and effectually applied in the education of the rising generation, the labors of the health officer would be greatly lightened in the near future, the necessity for much of his present work would disappear, and he would be left free for newer and higher fields of effort, as yet but partly explored but none the less important.

SOME PRACTICAL THOUGHTS REGARDING AFFECTIONS OF THE EAR.

BY EMIL AMBERG, M. D., DETROIT, MICHIGAN.

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SURPRISING as it may seem, a large number of patients suffering from affections of the ear are not yet submitted to proper treatment, and therefore it may be useful to consider a few events of common occurrence and points of general interest.

Foreign bodies are frequently introduced into the ear, or like insects, et cetera, they enter of their own volition. In removing foreign bodies from the ear it is necessary to discriminate between living animals and dead ones, and other inanimate foreign bodies. Furthermore, we must consider whether there exists a perforation in the drum membrane.

A famous aurist expressed the opinion that when dealing with a foreign body in the ear, the forceps should be put away as far as possible.

We can readily understand that if a forceps is employed while one is endeavoring to remove, for example a bean, the forceps is apt to push the foreign body farther into the ear. The main instrument employed in removing foreign bodies is the syringe.

Doctor Hoffman advises first to pour some water into the ear, and then to syringe the ear, as this will be more effectual than syringing without this preliminary procedure. A syringe tip which I devised sometime ago (See *New York Medical Record*, March 6, 1897) for removing cerumen might also be efficient in removing some foreign bodies.

Politzer says: "Syringing is contraindicated with heads of pencils if the opening of the body is directed outward, because the head may be pushed inward by the forceful entrance of water, and may become fastened; furthermore, syringing is not indicated when there exists a perforation in the drum membrane, if the syringing causes dizziness, or if the fluid passes through the Eustachian tube. Of one hundred and nine cases of Zaufal, the foreign body was removed by syringing in ninety-two cases; in seventeen cases the foreign bodies were fastened by previous maltreatment and the use of instruments was necessary to remove them. An accumulation of cerumen, in a sense, may also be regarded as a foreign body. Cerumen is almost entirely secreted in the cartilaginous parts of the meatus. Sometimes cerumen is pushed inward and is found nearer the membrane.

Syringing with water should not be resorted to if the foreign body, such as a bean, is likely to swell. In such cases oil or glycerine should be used. Weiss, professor of botany, recommends a mixture of one part ether, one part alcohol, and two parts of water for shrinking beans, peas, et cetera. If the foreign body does not yield to syringing, or if syringing is not indicated a skilled hand—but only a skilled hand—may try and remove the same by a proper instrument.

I have in mind a patient who came to the Ear Hospital, in Boston, one evening, with an insect in his ear which obstructed nearly the whole meatus, and as far as my memory goes, was about three-quarters of an inch long. I wondered at the time how such an insect could force its way into the meatus. The patient, was standing near an electric light when the insect found its way into the ear. The sensation of the patient can readily be imagined. The insect was easily removed instrumentally.

It should be borne in mind that the foreign body is not generally harmful to the patient, even if it rests in the meatus a number of years. Zaufal reports that one of his patients had a cherry stone in his ear for forty-two years. Improper attempts to remove foreign bodies are sometimes accompanied by unpleasant, and even fatal, results. Therefore, it is advisable that improper manipulation for removing foreign bodies from the ear should be avoided. Politzer reports that only ten per cent of all patients who come to the aurist with foreign bodies in the ear have not been previously subjected to aural manipulation. We can understand that patients who have been maltreated, for example children, are very excitable, which increases the difficulty, especially if an inflammation has been produced by unskillful interference. The removal of a foreign body is undoubtedly more difficult if it is in the tympanum. It may be necessary to detach the auricle in order to effect removal of the offending object. I once had occasion to witness an operation for removal of a foreign body upon a patient whose history and previous treatment necessitated surgical interference. Although a foreign body was not present, the denuded promontorium could easily be taken for a bean.

The general practitioner is likewise frequently confronted with acute ear affections, especially otitis media suppurativa acuta. We must be aware of the necessity to watch the ear in general diseases, especially in acute infectious diseases. It is sometimes very difficult to determine whether there is an affection of the middle ear, in small children, and it cannot be done without ocular inspection. I call attention to the complications during influenza, measles, scarlet fever, diphtheria, typhoid fever, tonsillitis, et cetera. The importance of an early incision of the drum membrane, as soon as the necessity presents itself, should be emphasized. If the drum membrane has a dark red color, and is bulging, and if there exists severe pain, one should not hesitate to make an incision. In influenza it is advisable not to wait until the drum membrane is bulging, because the process may be cut short by an early paracentesis. The importance of the paracentesis becomes gradually more familiar. Many practitioners are inclined to overtreat the ear after a paracentesis, by syringing and also by employing instillations of a more or less irritating character, while it is better to give the ear a rest after the paracentesis, if possible.

Walb calls attention to the fact that frequently too much experimenting is done with new antiseptics, when we have old reliable ones, and he decries, rightfully, the abuse of the air douche in the acute stages of the disease in order to expel accumulation of exudate from the tympanic cavity, because he regards it as a dangerous procedure.

Invariably the mastoid region must be watched carefully, and, if there should be any signs of inflammation, we may try to influence the same by outside application, which should not be of an irritating character. It is important, however, not to wait too long before opening the mastoid, especially after influenza. Generally a week or ten days should be the limit. Grave symptoms make the opening of the mastoid necessary at an earlier date. If there is pain on pressure over the mastoid at the three characteristic points, or all over the mastoid, a bulging of the inner posterior upper wall of the meatus, or edema of the mastoid region and fever, there is little doubt about the necessity for operation. However, some of these signs can be absent and the operation still be indicated. In earlier times many a patient may have died with the diagnosis "typhoid fever," or he may have been regarded as a sufferer from malaria, when, in reality, he died from a complication on the part of the ear. It is better to operate too early than to operate too late.

The fact should be emphasized that it is dangerous to wait for group symptoms before opening the mastoid. The indications fixed by SCHWARTZE (See also The Physician and Surgeon, April, 1901) must be regarded as a guide. Among the mastoid operations which I was called upon to perform, the case reported in the *Harper Hospital Bulletin* of August, 1900, is especially interesting. In this case pyemia was already present but the patient recovered.

That it is not wise to wait for group symptoms was proved by a successful mastoid operation on an insane lady which I performed in the Wayne County Asylum for Insane Patients. The main symptoms were pain and fever. That all points and surroundings should be considered in judging of a patient's condition is illustrated by the following occurrence: About one and a half years ago I was summoned to a charity patient in one of the hospitals of Detroit. I opened a periosteal abscess in the right mastoid region of a girl of about twenty years old. Soon after the operation the patient developed a facial paresis on the right side of the face. The eye muscles and the taste were not affected, and the tongue and uvula showed no deviation. For nearly one week suspicion was entertained by me that the facial nerve was affected within the petrous bone. I remembered, however, that the patient (it was summer and the windows were open) lay in a draught in a corner of the ward in the hospital. The upper branches of the facial nerve were partly protected by the bandage. I then made the diagnosis of partial rheumatic facial paresis. Treatment with the galvanic current proved successful.

At least, about sixty per cent of all ear troubles are caused by nose and throat affections. Of foremost importancc is the removal of adenoids whenever they are present.

The adenoids, being so near the Eustachian tube and favoring the existence of catarrh, et cetera, are very apt to cause affections of the ear, not only by closing the ostium but also by being the cause of more or less severe inflammations of the middle ear. More attention should be paid to adenoids and affections of the tonsils in public schools.

It is of great importance to cleanse the nose properly, especially when an inflammation has begun in the ear. The practice of closing both sides of the nose and then allowing a kind of an explosion to take place is injurious. It has been remarked rightly that the cleansing of the nose "à la paysan" is more hygienic. This can, easily, be combined with the more refined method by the aid of the handkerchief.

The use of a nasal syringe can be followed by symptoms indicating derangements of the ear. The nasal syringe should be abandoned in favor of the nasal douche as represented by the Bermingham or the Fraenkel, or a similar apparatus. Indeed, it would be very appropriate to speak in future, as has been suggested, of the nasal bath, rather than of the nasal douche. Especially in children, the nasal bath is preferable to the nasal syringe, if fluids are used at all.

DOCTOR C. M. COBB, of Boston, in a paper before a recent meeting of the Mississippi Valley Medical Association gave a very interesting account of an ear affection which was caused by nasal treatment. He has kindly advised me of some facts bearing on similar cases in the following letter:

"DOCTOR MANNIX is away at present, so I will venture to give you the facts which he observed while acting as senior house officer in the South Department (contagious ward) of the Boston City Hospital. He was very much interested in the question of whether spraying and douching the nose had a good or bad effect upon the ears, and for this reason observed the cases closely. It was found that the cases in which a douche or spray was used almost invariably had involvement of the middle ear. This accords with the observation of another physician who served for three months as clinical clerk and three months as substitute house officer in the same institution. During his service the only cases in which the nose was washed were those in which nasal feeding was employed. Involvement of the ear was so common in these cases that it was expected as a matter of course. This is my experience, that washing the nose is almost invariably followed by involvement of the middle ear.

"PEARCE reports, in regard to the involvement of the ear, without reference to whether the nasal cavities were washed, that in the twenty-five cases in which the sinuses were involved, during the course of diphtheria, the middle ear was affected in fifteen cases, that is out of the thirty-nine cases twenty-five had sinus disease, and fifteen of these had inflammation of the middle ear. In nine, both ears were involved, and in six, only one.

"While there is a great liability of involvement of the middle ear in these cases, the affection of the sinuses increases this liability, and any attempt to treat the nasal cavities by douching or spraying, during the course of the primary disease, undoubtedly greatly increased the risk of infection of the middle ear. DOCTOR MANNIX tells me that during his service they abandoned washing the nose or throat because of its bad effect upon the ears. He is also certain that it has never been done in the city hospital since."

In the treatment of simple chronic suppuration of the ear, which disease is rather frequent, the first indication is to arrest the discharge. Great discretion must be shown in using the syringe. The dry treatment should always be resorted to if possible and especially the drainage of the middle ear. The instillations of various antiseptics are commendable, under certain circumstances. I use with good result, an alcoholic solution of corrosive sublimate in various strengths.

There is a distinction to be made between douching an ear and syringing an ear. Douching means the application of the fluids to the meatus and drum membrane for a certain length of time in order to derive thermal effects. Syringing means cleansing by the aid of the one or other fluid. For many cases the rubber bulb syringe with soft rubber tip, advised by me, is useful.

We should keep in mind WILDE's words: "So long as otorrhea is present we can never tell how, when, or where it will end, or where it may lead to." In a chronic suppuration of the middle ear when success does not accompany peaceful treatment radical interference becomes indicated.

Cotton should not remain unchanged in a discharging ear for a great length of time. The patient should always be directed not to put the cotton inside of the ear any considerable distance. I had opportunity to see, by courtesy, a child which was admitted to a general hospital. A correct diagnosis could not be made and an examination of the meatus showed a foreign body deep in the meatus which I removed and which proved to be cotton soaked with discharge. It could not be ascertained how long the cotton had remained in the ear. I am rather inclined to think that the child died in consequence of a retention of pus as an early operation by one of the foremost European aural surgeons revealed practically nothing locally.

The over-treatment of the ear by the Politzer air douche or by massage, is a common occurrence. Continually repeated hearing tests must guide us in choosing the manner of treatment. The final word concerning rapid massage has not yet been spoken. Before treating an ear the mobility of the sound conducting apparatus should be ascertained by the use of Siegle's speculum or any of its modifications.

Patients with so-called sclerosis of the ear need careful attention as to special and general treatment. "Nihil nocere" should be the watchword in these cases. POLITZER, SIEBENMANN, PANSE, HARTMANN, KATZ and others have called our attention to changes in the osseous structures which may take place in cases of this character. While the pathology of the process may explain, in many cases, the unsuccessful results of any routine procedures, we should carefully individualize and base our special and general therapeutic efforts on a repeated conscientious examination of the hearing organ and adjacent parts and on a thorough consideration of the general condition of the patient.

Like in other cases, rest amounts to a great deal in acute ear diseases. We should keep the patient in bed, or in the house as long as necessary. Acute cases should not be treated in dispensaries but at home or in the hospital.

In conclusion I should like to call attention to the influence which a middle ear suppuration may exercise on the digestive tract and thus on the whole system. If there is pus in the tympanic cavity it is very probable, especially in children, that it wanders through the Eustachian tube and is swallowed. This must be of consequence for the health of the patient. I think that this circumstance should be watched and perhaps added to those which form the indications for surgical interference in middle ear suppuration.

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270 WOODWAD AVENUE.

THE RESTRICTION OF SCARLET FEVER.*

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THE restriction of scarlet fever is a subject which, it seems to me, deserves special attention at a convention of this nature. In the first place the mortality from scarlet fever ranks high in this State; in the second place, the permanent after effects in the form of chronic kidney disease, chronic deafness or something equally serious are not uncommon. Again, the infection of scarlet fever, whatever it may be, is one of the most tenacious with which we come in contact. You all have read many reports in various text-books and medical journals of epidemics of scarlet fever traceable to clothing of persons who had had the disease years previously and had carried it for miles to some relative. Again, other epidemics have been traced to milk, years after scarlet fever had been seen in the family of the particular milkman.

If it were possible in public health work in a large city to carry out to the letter the resolutions as laid down by organizations of health officers in their meetings, the fight against this disease would be considerably less difficult. At a meeting of State and Provincial Boards of Health of North America, the following resolution was adopted in regard to the restriction of scarlet fever:

"*Resolved*, That the isolation of the person or persons afflicted with smallpox (varioloid) or scarlet fever (scarlatina or scarlet rash), and of the nurse or nurses attending upon such person or persons, shall be absolute. That such isolation shall continue for a period of not less than four weeks from the first appearance of the eruption, and as much longer as may be necessary to secure complete desquamation, the necessary period to be determined by the health officer in charge, or his assistant."

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* Read at the Sanitary Convention held at Ludington, September 5, 1901.

Now let us add to this, a resolution for thorough disinfection with formaldehyd after the disease has run its course and we have an ideal manner to prevent the spread of this formidable enemy to human life. But what are some of the difficulties we encounter in endeavoring to carry out such rigid regulations and what is the remedy in each case?

If we can answer these questions properly and satisfactorily, we have established a method for the restriction of scarlet fever which can be carried out and which will be more effective than a more rigid method not properly enforced.

One of the first and most constant difficulties that we encounter is the poverty of the family in which the case occurs. Poverty brings with it the inconvenience to the sanitarian of a small house and the small house in turn means that isolation of the patient is next to impossible. On the other hand the head of the family must be isolated so that he may earn a livelihood for himself and the sick ones. Why not send him out of the house to some relative and keep him there during the course of the disease? That is a good solution, but having been in the infected house for a number of hours he himself and the clothes that he takes from the house must be thoroughly disinfected. This again is difficult because of the lack of room. It is advisable, therefore, in a case of this kind, for the health officer to go to the house as soon as the case has been reported, look over the situation and formulate his plans. The mere placing of a placard on the house does not quarantine. The reasons for all our actions must be explained to the people, they are inconvenienced by our quarantine and are entitled to some enlightenment regarding the situation.

Having established a quarantine in this manner, the next difficulty we encounter is that the quarantined persons will not obey the rules as laid down; they will break quarantine. What is the remedy? I have heard the suggestion, "Prosecute the offenders." This cannot be done until after the disease has run its course and in the meantime we run the risk of infecting the entire neighborhood. There is only one remedy—guards. When people will not obey the law, they must be watched. There must be a guard stationed at the infected house constantly during the twenty-four hours of each day to see to it that no one either leaves or enters the house.

Most people will submit to a short period of confinement, but the longer the period, the more difficult it is to maintain quarantine. Not only is this true, but the longer the period of quarantine, the more difficult is it to learn of the existence of the disease. The laity do not object so seriously to our regulations regarding diphtheria, because the period of confinement is usually short; but when the physician diagnoses scarlet fever and the family knows that this means that they are to be locked up for at least four weeks and probably much longer, they begin to plead with the family doctor to suppress the case. The firm, upright physician will not yield, but the weaker members of the profession fearing lest they may lose the fee attending this case and subsequent patronage from the family are tempted and sometimes, shameful though it may sound to say it, suppress mild cases. And these suppressed cases are the causes very often of epidemics; the causes sometimes of a number of deaths.

The physician is not prosecuted because he is not discovered, but the lives of the little ones, through his criminal suppression of a very mild case, are sacrificed. This is indeed a serious difficulty and how are we to meet it? We cannot promise a shorter quarantine than the duration of the disease will permit, but we can promise to make it as short as each individual case will allow. In other words, we will gain the good will of the laity and the profession, and these we must, have to be successful in our work, by promising them in each case to raise the quarantine as soon as the particular case has recovered, regardless of any time limit. What does this mean in regard to the period of quarantine for scarlet fever cases? It means that in the vast majority of cases the quarantine will continue at least four weeks, and in a considerable number of cases a much longer time, but it also means that in some few exceptional cases the quarantine may be raised in less than twenty-eight days, say as early as twenty-one days. There *are* cases of scarlet fever, exceptional to be sure, that complete desquamation in this brief period, and by yielding this point we obtain the great advantage of locating a large number of cases which would otherwise escape detection. I wish to add this precaution: no case should ever be disinfected until after it has been examined by the health authorities and pronounced recovered.

One of the most trying situations that confronts the health officer is when death makes its grim appearance in a quarantined house. The body of the dear little one is to be carried out, the usual coterie of friends are not allowed to come in and sympathize, but the bereaved mother, and often the older sister or brother, plead that they may accompany the dear one to its last resting place. Whenever this is permitted, the disinfection of the persons who are allowed to go and their clothes must be thorough. It is best, perhaps, to have all the clothes to be worn on this sad occasion put in a room the night before the funeral, there to be disinfected by being exposed to the disinfectant all night in the room which had been previously sealed. The next day the persons who are allowed to go, should be ordered to bathe, go immediately into the disinfected room (which has now been aired), there don the disinfected clothes, and if possible leave the house from this room.

In cities where we have access to large hospitals, and especially in cities where the municipality itself controls a city hospital, it is advisable to transfer all cases of scarlet fever, as soon as we know of their existence, to the city hospital. But even in this instance we meet with a difficulty. For example, a case of scarlet fever is reported in a house where there are five other children. The patient is at once removed to the hospital. But what about the other children? They have all been exposed and should be quarantined for at least two weeks—the maximum period of incubation of the disease—until we are certain that they are not coming down. But is this method practicable? Certain it is that after the sick child has been removed from the house, the others will not stay in unless the house is guarded; and will the average city allow the health authorities money for guards under such circumstances? No, it will not. Consequently the practical thing to do is to disinfect at once the house from which the patient has been taken and then examine the other inmates daily for possible additional cases of the disease.

All of the foregoing precautions must be observed during the entire year to prevent the spread of scarlet fever, but during that part of year in which the schools are in session new troubles begin. The health authorities in a given city may succeed in keeping down the number of cases of scarlet fever during the summer months, but when the children begin to return to school the number of cases of scarlet fever begins to run up. Is there a remedy for this difficulty? Yes, a very certain one, and one that should be applied in every city, village and township. Medical inspection of the schools daily under the supervision of the board of health will do much to restrict scarlet fever. Many cases will be recognized that would otherwise have gone unnoticed and would have infected others. In Chicago the medical inspection of schools was introduced a few years ago. During the first four months of last year 76,805 school children were examined and 4.539 were excluded from school on account of contagious diseases. This remarkable result was obtained in spite of the fact that the number of inspectors was inadequate for the work according to report submitted by the superintendent in charge. The particular method of school inspection depends upon the local authorities. Reforms of this nature are slow and must be worked out gradually. In Detroit there has been no inspection of schools up to the present time, but it is a reform that should be introduced and I am now conferring with members of the board of education with reference to inaugurating some such system during the next few weeks. In my opinion, a daily examination of school children is one of the most important steps to be observed in guarding against the spread of scarlet fever.

After the case has run its course and the health authorities have determined to raise the quarantine, it is time for disinfection. This process should be very thorough. Burning a bit of sulphur in the infected house or spraying a trifling amount of formaldehyd does not disinfect. The infection of scarlet fever is very tenacious and we must destroy it. Formaldehyd is the best germicide that we know of at this time for this purpose and we must use it and use it freely and thoroughly. The most practical way—if not the most scientific—is to sprinkle the formalin (a forty per cent solution of formaldehyd) on a sheet suspended in the room. The room must have been previously sealed, and at least six ounces of formaldehyd must be used for about every one thousand cubic feet of space.* The room is to be kept closed at least six hours, but it is better to keep it closed all night. The rest of the house should also be disinfected.

There is one other matter that I wish to mention in this connection. Every health officer should make it his business to find out if possible the source of infection of the cases of scarlet fever which come within his jurisdiction. There is at present an epidemic of this disease in Delray, a village a few miles west of Detroit. The cases seemed to spring up very suddenly, and it was difficult for the health officer to determine the source of the infection. By diligent work, however, he finally concluded that all of the cases were traceable to the milk supply from a certain dairy. Following up his theory, I found that one of the Detroit cases, located in the extreme western end of the city and near Delray, was drawing its milk from the same source. As I went along the route of this milkman in Detroit, I have been able to locate another case, which had not been reported and which is now in the stage of desquamation. The milkman has been ordered to stop selling milk in Delray and Detroit, and the danger from that source has been removed.

In summing up the most important rules that local health officers should enforce, I would consider them in the following order of importance:

(1) A thorough medical inspection of the schools.

(2) Isolation of the patient in a hospital if possible, followed by immediate disinfection of the premises and of all persons that have been exposed, and a careful daily inspection of such persons.

(3) Isolation of the patient at his home, whenever transfer to the hospital is impracticable. Strict quarantine of the house for a period equal to the duration of the disease, but never shorter than the maximum period of incubation.

(4) The employment of guards to enforce quarantine.

(5) Thorough disinfection with formaldehyd of the house and its contents before quarantine is raised.

(6) Thorough investigation into the possible source of infection of each individual case.

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* The State Board of Health recommends that not less than eight ounces per thousand cubic feet be used.

WHY DOES ONE TAKE COLD?*

BY ALEXANDER STEWART, M. D., HIGHLAND PARK, MICHIGAN.

TAKING cold is such a common everyday phenomenon that but few if any have not experienced it in their own person and no one but must have observed it many times in others, no matter how limited his practice either in extent or scope. Taking cold so-called and its results must often be brought to the physician's attention and lucky indeed is he if it is not frequently a matter of very personal character. When we consider the frequency with which it is observed and the many and serious maladies for which taking cold is blamed it is very difficult to account for the vague and indefinite views held on the subject even by medical men as a rule and surprising how little attention the subject has received at the hands of medical writers. It is cited as the exciting cause of a great many ailments in all the standard works on the practice of medicine, more particularly those relating to the diseases of the respiratory passages, for many of which taking cold is a popular synonym, but without any attempt being made to explain either the how or the why of its influences.

I know of no subject in the whole range of medicine in the study of which one can get so little assistance or find so little literature. I have only been able to find three or four writers who have discussed the question at all and they with one exception confined themselves to explaining the mechanism of cold-taking or atmospheric conditions favoring it, questions to my mind of far less importance since experience as I think teaches us that it is practically impossible to avoid the exposure that is at times sufficient to produce that result, or at least this cannot be done without so circumscribing our lives as to largely reduce its possibilities for pleasure or usefulness. Even on these questions, however, there is so much disagreement as to show that the evidence is far from conclusive.

With the mechanism of the process I will not detain you as it does not concern this enquiry, any further than to remark that DOCTOR BOSWORTH's explanation in his little monograph "Taking Cold" is very far from satisfactory seeing that the conflagration is sometimes started where, according to his theory, the fire had been extinguished.

With regard to the atmospheric conditions necessary and the varied and conflicting views thereon I will speak more at length in order to show how insufficient the cause is on careful enquiry of producing the result usually attributed to it. DOCTOR BOSWORTH, in the work above cited, says that absolute temperature has nothing to do with taking cold; that it is only when a portion of the body is exposed to a lower temperature than the rest that cold is taken, as, for instance, when sitting in a warm room and having a cold draft strike on the back of the neck. But how can we reconcile that statement with the frequent instances in which cold is contracted standing on a street corner waiting for a car that fails to come when wanted. He also says that more colds are contracted in mild weather, when the temperature is between 35° and 40° Fahrenheit, a statement which I agree with but fail to see its bearing on how cold produces disease. However, I will refer to this point later. DOCTOR BOSWORTH also draws attention to the fact that the body may be exposed to low temperature of great intensity but short duration not only with impunity but with positive exhilaration. The author of the article on bronchial catarrh in "Ziemssen's Cyclopedia," claims that the disease increases in frequency as we recede from the tropics to higher latitudes, while others say that these dry cold latitudes are remarkably free from bronchial diseases. I think it was DOCTOR KANE's men who suffered greatly from starvation and scurvy but not from catarrhal troubles though exposed for seventy-two days to a temperature of 40° below zero. HIRSCH, in the work above quoted, thinks that it is the humidity of the atmosphere that is responsible rather than the sudden and severe changes, and that catarrhs are most frequently observed when the temperature and dew point fall closely together; in other words, when the relative humidity is greatest. SEITZ, in his article on taking cold, thinks that three factors are necessary—cold, wind, and moisture, and that any one of these will not act alone—yet people are very timid about going out in the dew even on a warm summer night, and he admits that a cold is often contracted by exposure of some portion of the body on a hot day. LUBERT, again remarks that it is not by any means the warm, dry, beautiful years that are least fruitful of catarrhs, but rather the wet and cool, and he accounts for this by the fact that transitions of the seasons are less precipitate; all of which goes to show what indeed we may observe ourselves every year that there is no proportion between the intensity of the chill and the result; that external conditions play but a very unimportant part in the phenomenon of taking cold; and that the essential prerequisite is a morbid condition already existing in the body. What that condition is we may learn by enquiring, first, what ailments predispose to catarrhal troubles, how they affect the system, and what would produce like conditions in the otherwise healthy individual?

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*Read before the WAYNE COUNTY MEDICAL SOCIETY.

The influence of certain diseases in creating a predisposition to catarrhal affections is so well attested and universally accepted that no argument is required to sustain the assertion. Neither is there any dispute as to the identity of at least several of them, namely, scrofula, gout, rheumatism, syphilis, and alcoholism; for the manner in which they affect the organism is by causing the waste and by-products of digestion and assimilation to accumulate in the system, thus poisoning the individual with his own secretions.

The next question is, under what circumstances will such conditions arise in an otherwise healthy individual? We might get a hint in answering this question from the experience of stockbreeders and more particularly horsemen. A horse running out to a strawstack all winter, no matter how sudden or great the changes, does not take cold. He may be very weak, may die from the combined exposure and starvation like the men on the artic expeditions, but take cold never. On the other hand, take that horse before he has succumbed to the adverse conditions, put him in a warm stable, feed him, not plenty only, but all the strong, rich food that he will eat, and at the same time give him little or no exercise, and you will be very apt to find some morning that your horse has contracted a severe cold or a surfeit, a name given when the skin is affected instead of the mucous membrane. The half-starved hack horse of a drunken master who spends the money in beer or whiskey that should go for oats may stand exposed for hours to the wintry blast without taking cold, while the well fed, well groomed carriage horse will get chilled very readily if allowed to stand too long unless carefully covered and is often sick despite all precaution.

We are told that man was made only a little lower than the angels. We know that he is very closely related to the lower animals and subject to the same physiologic law. Being convinced that catarrh holds a close family relation to gout, and that it is still closer connected with migraine, acute gastric catarrh and summer complaint, so-called, which are acknowledged to be caused by indiscretion of diet, I feel assured that if we fed ourselves as a wise man does his horses—according to the work required—or follow ABERNETHY's advice to the dyspeptic, "live on sixpence a day and earn it," there would be very little danger of catching cold. On the other hand, if instead of eating to live we eat for the pleasure derived from the act and enhance that pleasure with all sorts of condiments then we may expect to catch cold, for everything above what the system can assimilate is just so much of a handicap to it.

TRANSACTIONS.

DETROIT MEDICAL SOCIETY.

STATED MEETING, OCTOBER 30, 1901.

THE PRESIDENT, DELOS L. PARKER, M. D., IN THE CHAIR.

REPORTED BY LOUIS J. GOUX, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR JAMES E. DAVIS read a paper entitled "A Study in Obstetrics." (See page 533.)

DOCTOR NEWMAN: I venture to say that of two men, one an adept at the use of the forceps, but not cleanly, and another unskilled with the use of his instruments, but careful in regard to cleanliness, the former would have the largest percentage of deaths. Of course, there is no rule for the use of the forceps, so much depends upon the man behind them. The obstetric forceps is the most valuable surgical instrument that we have today when in the hand of skilled persons. I would take some exception to the idea that the forceps should always be removed when the head touches the perineum. It seems that when the sharp forceps are applied where there is danger of rupture the face can be brought up over the perineum and be controlled so much better and laceration can often be avoided even when it is imminent.

DOCTOR YATES: I can think of nothing that should be spoken of with more certainty than the possibility of the results which follow the washing with little regard for the antiseptic lotions themselves. I mean merely the washing with soap and those remedies which are not known as strongly corrosive. DOCTOR DAVIS has mentioned mustard. I think that is a good one, although I have not used it in practice. What I wish to call attention to is that it does seem that it is much more available for obstetricians to use soap and water, and brush if necessary, than to use or depend upon strong antiseptics for the killing of bacteria, and I believe our success will be largely proportionate to our active preparation in common cleanliness, rather than our high regard for bichlorid solution or the ordinary medicinal soap. I can think of nothing in the practice of medicine that requires so much courage as at times becomes necessary in the lying-in room. Not the courage of activity so much as the courage to be passive. It is an easy matter to give chloroform, to assist in the dilatation with one's hand, and friends, many of them, are willing that you should give chloroform or "do something," but it requires, I believe, more courage on the part of the man to, in spite of all urging, have the courage to let labor proceed in its natural course, and I believe that just in proportion as we watch nature's movements will better results be obtained than if we hastily give our patient chloroform and deliver. The manner of expressing the placenta is, undoubtedly, as DOCTOR DAVIS has brought out, the desirable one. However, I can easily understand how serious mistakes might happen, or rather how we fail or may fail many times in endeavoring to use the manner precisely as laid down by the author, in this, that in our endeavor to release the placenta too soon after the expulsion of the child, and by our anxiety to do this we grasp the uterus in the way mentioned and press out without regard to the pain itself. I believe that many of the failures are due to the fact that we are in too much haste to relieve the placenta. I believe that in the use of the forceps many times we hasten delivery even then too much.

DOCTOR COLLINS: There is one disagreeable feature that confronts us in obstetric practice. It is failure to properly control the conditions of our patients. If we were in a well-equipped lying-in hospital with trained assistants our death rate should be very small, but in a majority of the cases in my experience I have met untrained assistants and people burdened by superstitions. Sepsis should not occur under ideal conditions, but physicians do not always have ideal conditions. In regard to the delivery of the placenta, I believe it is usually hurried to too great extent. In regard to postpartum hemorrhage following the expulsion of the placenta, which sometimes occurs, a sufficient means that we have of stopping that hemorrhage is to place our hand or something in the uterus to cause its contraction. If we fear postpartum hemorrhage one of the most efficient things is the presence of the placenta in the uterus. There are cases, of course, wherein a portion of the placenta is still in the uterus and we have to interfere, but in a majority of cases by leaving the placenta until it is almost practically expelled, thereby insuring contraction and more tone after the placenta is expelled, we get better results.

DOCTOR SAFFORD: The author made a statement that "the uterine contraction in the lower segment is the sole means for the dilatation of that part." I doubt whether he means exactly that. The pressure applied in the principal part of the uterus is transmitted below. Nothing has been said tonight about ether anesthesia. I think this is becoming to be recognized in some cases, if not in many, as a useful alternative. In regard to the work of the shoulder in tearing the perineum, I do not think any one will question that statement. A practical point which occurs to me is that instead of bearing directly upon the head or shoulder as it is coming down, to not only do that but bear through the walls of the thin perineum in a way so as to draw the perineum backward, and, as it were, relaxing the posterior side, and if there must be laceration, transferring it to the lateral, where there will be less trouble. In regard to tying the cord, I should like to ask the doctor whether he finds it a practical difference whether he leaves the cord untied. I have found it best to tie the cord twice so as to give some force to expel the placenta.

DOCTOR MANTON: I like what the doctor said in reference to the bladder. I have found that in a good many cases the bladder has been a source of trouble. I have seen the temperature go up following labor to 103° and 104° as a result of a distended bladder, falling immediately as soon as the bladder was evacuated. It is not always easy, however, to evacuate a bladder after labor. I have known one person to search with a lighted candle for more than an hour without being able to find the meatus urinarius. This procedure sometimes puzzles one, especially if he is not accustomed to inserting the catheter. Ordinarily in cases of laceration, if properly looked after, and the parts are perfectly healthy, a suturing of the perineum ought to be followed by excellent results. There is one point that the doctor did not mention, that is, as soon as the head is born the finger should be carried around the child's neck to ascertain if the cord encircles the neck. The ordinary discoloration of the face of the child is not dangerous, but if we have a cord wound tightly around the child's neck we may have asphyxia. If the cord is very tight the best thing to do is to cut it at once and deliver the body of the child. To prevent postpartum hemorrhage this was once adopted by SEMMELWEIS, of Germany, and then a howl was heard throughout all Germany that instead of preventing postpartum hemorrhage it rather induced it. The point was this: He advocated expression only after the uterus had contracted two or three times for the delivery of the child. There is always a resting period after the child is delivered, the uterus contracts down, contracts and retracts. In the course of a few minutes it begins to contract again, a little feebly at first, and then stronger, and, with the second or third contraction, CREDÉ advocated his method of expression.

DOCTOR HIRSCHMAN: The author speaks of delivering the placenta by tying the cord of the child and allowing the blood to drain from the organ, thereby facilitating its expression. I think it might be better if, instead of allowing the blood to drain, we keep it in the placenta, as a firmer mass would be more likely to cause contraction and expulsion. There is reference in the paper to the influence of the shoulder in causing rupture of the perineum. I have read a number of notes made by some Germans of a French doctor who had measured a great many head, shoulder and chest-thorax plus elbows of a large number of newborn children. He found that the head diameters was a certain sum, the shoulders was larger, and the thorax plus the elbows was still larger. I myself have found that I would get greater or lesser tears in the perineum after the head had been delivered. The application of the knowledge that this man gives was to see which was the lower shoulder and then by simply passing in the two fingers one could find which arm would correspond with that shoulder. In a great majority of cases it is a simple procedure and gives safety and makes the subsequent delivery of the child very much better.

DOCTOR DAVIS: DOCTOR MANTON has perhaps answered the question of DOCTOR NEWMAN. I referred to the statistics of SEMMELWEIS, and he found that after he had instructed his students to wash their hands in chlorine water that the number of deaths were reduced to about ten per cent. I referred to men who keep their hands markedly clean. I want to emphasize what DOCTOR COLLINS said about taking time with the forceps. I have noticed that there is an idea that when you put on the forceps you must immediately deliver. It is a fact that forceps can be left on the head for an hour, probably longer, without any harm being done. We ought certainly not to hurry because we have the forceps on the head. Regarding another point which DOCTOR COLLINS referred to, about leaving the placenta longer in the uterus, it has also been observed that the placenta may be left in the uterus for a long time. Some men have told of it being left in the uterus as long as some months without any harm coming to the mother. Referring to DOCTOR SAFFORD's remark about the dilatation of the lower segment, it seems to me that the physiology of the process showed that the pressure from above simply stimulates the pains which dilate the lower segment. I did not mention ether as an anesthetic; I think we all know that in many parts of the country it is used exclusively, and in many instances it is, perhaps, a better anesthetic to use than chloroform. There are practical cases in which the chloroform will cause the pain to cease to some extent, and in these cases perhaps ether would be a better anesthetic. In regard to tying the cord on the other side, did we understand thoroughly the physiology of its actions we would know accurately which were the better thing to do, to make the two ligations in the cut or the one, but I believe the physiology is not thoroughly understood as yet, and, not knowing just how the separation takes place, perhaps not much can be said for or against the method of making just one tie, but it has been my observation that in quite a number of cases the placenta comes away more quickly and without any bad results by allowing the blood to drain away and, in that way, there is a quicker expulsion of the placenta and, apparently, without any harm. In regard to the case of goitre: There is this interesting point about all children born of the mother of that particular child. Some three children have been born previous to this one, and all the children had enlarged thyroid glands, but in every case the skin assumed its normal size in the course of some months. In regard to the douche, I think that it ought not to be employed either before or after labor unless there is some special indication.

EDITORIAL ARTICLES.

CONTRACT MEDICAL PRACTICE.

THE subject of contract medical practice has heretofore received little attention in this country. The general welfare of the working classes here has favorably affected the members of the medical profession. Competition is unhindered among us, but it has not yet become as keen as in the older cities in Europe. The abuses that seem to have been most strongly felt and complained of in the United States have been those fostered indeed by ourselves. They are the dispensary, hospital and other charities of a medical nature. These have developed to such magnitude, particularly in the large cities, where ills of all kinds are soonest felt, and involve so many of the so-called leading practicians that other abuses are scarcely noticed, or, if observed, are felt only by a few, who suffer in silence.

The abuses to which we have just referred are, however, more real than fancied. They are wrongs which will not brook much longer silence. As a class we are becoming entangled in the web of sharp and close business practice. It is not the individual that we need fear, but the body corporate—the insurance, the railroad, often the court and other soulless corporations. They demand our services for a mere pittance and smile at our grievances. The saddest feature of the whole matter is, moreover, that some of our professional associates, who have become allied with these soulless bodies, often defeat the interests of their own profession. A medical director, for instance, of a life or accident insurance company, will play Shylock in the interest of the concern that gives him scant bread and butter, and curious as it is, turn about and descant upon the graces of professional ethics. In other words we, or at least our professional associates, invite even these troubles.

Contract medical practice, as the phrase is commonly used, is somewhat different from either of the foregoing abuses. It is not new with us, but is managed, as a rule, so quietly as to be almost unobserved by the great majority. It consists in medical attendance upon members of clubs or lodges by the appointed or elected physician at a stipulated sum. In some organizations the families of members, or those dependent upon them, are also included in this arrangement, and the contract price is made to include operations, or other special work. The advantage of this scheme to lodge members comes from the cheap rate at which medical services can be had. The inducements to the selected physician are the certainty of remuneration and the hoped for introduction to private practice. Under ideal conditions both parties should feel happy, but as a matter of fact the ideal is seldom realized even from this plan. It fails if the chosen servant be either incapable or unscrupulous, and one of these possibilities is very liable to occur, for the reasons that such projects tempt only the recent graduate, or the older physician who cannot build up a private practice, and further because at the rates allowed one cannot usually do faithful work. The plan ultimately dissatisfies the physician also who in comparing the work and pay, finds the remuneration so small that he is usually ashamed to tell what it is. As to private practice, the honest testimony of numerous club physicians go to show that they are practically incompatible. From all accounts the Ludington plan bids fair to repeat this history. It is simply an attempt, like the abuses from soulless corporations, to get something for nothing—a process which too often succeeds, by virtue of our professional ethics. Occasionally, however, one of us comes out on top, and the story of it is almost as refreshing as though the profit were our own.

The *British Medical Journal* recently recounted the following item: "DOCTOR F. W. NILES, of Wood Green, recently claimed in the County Court two guineas for professional attendance. The defendant admitted owing one giunea, and that amount he paid into court. With regard to the remainder he had never received particulars, though admitting he had never asked for them. His Honor gave judgment for the amount claimed, with costs, at the same time congratulating DOCTOR NILES in prosecuting his claim as he had. He hoped other medical men would do likewise, for he was of opinion by not so doing the medical fraternity did great harm to the community. Their reticence engendered a belief in the minds of people, not only that medical men should not be paid, but that ordinary tradesmen should not be paid as well. This was a very demoralizing state of affairs, and his Honor considered plaintiff had acted wisely in the step he had taken."

ANNOTATIONS.

THE TREPHINE IS SURELY PASSING.

IN a recent number of the *Boston Medical and Surgical Journal*, MANLEY awakens us to the almost imperceptible but nevertheless certain passing of the trephine. A valued part of the surgeons' armamentarium from time almost immemorial, and even yet the subject of deference and rules by most surgical authors, it has been practically discarded for several years. Open as it is to so many valid objections, the wonder is that it was not relegated long ago. The accidental opening of a sinus, the rough serrated edge of bone, the frequent fracture of the inner table, the occasional injury of underlying structures, and the usual loss of the osseous covering of the brain by the removal of the bone button, all these are objectionable features incident to trephining. As MANLEY remarks, the osteotome has quite generally displaced the trephine in Germany, France, and Italy, and its adoption only lingers in England and America. By the use of the newer instrument with local anesthesia also many operations, formidable and dangerous by the older method, can be reduced to trifling procedures.

ON THE FREQUENCY OF PNEUMONIA AND ITS MORTALITY.

RECENT observations and reports indicate a greater case-frequency of pneumonia since the advent of influenza in 1890. Its mortality has also increased. BARR is quoted in "Progressive Medicine" as recording a rise in the deaths in Liverpool between 1896 and 1898 from 172 to 206 per 100,000 inhabitants, or seven and six-tenths to nine per cent of all other deaths. When compared with the previous estimate by JURGENSEN of three per cent of all other diseases, the present mortality is seen to have more than doubled. The character and frequency of postoperative pneumonia seems to be often misunderstood. There is a general impression that the use of ether and chloroform is frequently followed by pneumonia, and the bronchial irritation so often observed strengthens this belief. The fact is, however, that postoperative pneumonia is much less common since the birth of anesthesia. In the "Twentieth Century Practice of Medicine" are mentioned **Erichsen's** observations that of forty-one deaths after surgical injury no less than twenty-three subjects presented signs of pneumonia. In contrast to this, modern surgery, as shown by **Silk**, presents only one case in 5,000 operations. This estimate may be larger than other statistics might justify, and yet the conclusion seems reasonable that the anesthetic protects from rather than predisposes to this serious complication.

CONTEMPORARY.

THE EVOLUTION OF SPECIALISM.

[MEDICAL RECORD.]

In the good old times, the written and unwritten ethics of professional relations made it distinctly understood with all parties concerned that when once a patient put himself under the care of a physician, the latter necessarily owned him body and soul. It became, then, a matter of as much importance to the sick one to choose his medical adviser once and for all time as to embrace an article of faith in his religion. The family physician, when the stray sheep entered his fold became responsible for his safe-keeping until the time when the absolute and inevitable decree of nature made longer possession impossible.

Under ordinary circumstances, the advantages to both physician and patient were obvious enough in bringing them in constant and confidental relations with each other, and in enabling each to discharge those mutual obligations of trustfulness which should properly exist between them. Thus, the old family physician was as much the general adviser on all matters medical as was the priest or clergyman on matters spiritual.

It would be hard to prove, even in these days of advanced specialism, that the patient was much worse off then than now, if the actual statistics of general mortality are seriously taken into account. There was one element of safety in the treatment by the old-fashioned method, and that consisted in the practice of a forced and judicious conservatism, which was not so prone to interfere with nature's method of cure in the commoner diseases, and which thus offset some of the failures in the rarer ones. The family doctor became thus a good all-round man for ordinary emergencies. He could operate for hernia, tracheotomize a strangling infant, set a fracture, and perform version as effectively as he could blister a pleurisy, treat typhoid, venesect for pneumonia, or "physick" for dysentery. Hence he was the only one consulted when sickness visited his district.

Of course, some of his patients died for want of special skill, which he did not possess. On the other hand, no one was apt to suffer from overtreatment.

The possession of too much skill is in itself an element of danger. The deft operator is apt to use the knife too frequently. Any one who follows the discussion concerning the new operative procedures of the day need not be convinced of this fact. While some patients are saved, how many are lost as the result of absolutism in extremes? In the evolution of a new idea—a so-called improvement on nature—the scales are constantly shifting with the counter weights which are used. What physician or surgeon long in practice has not gone through countless epidemics of remedies and operative methods that have in the end made him immune against any undue enthusiasm? We have had notable exceptions to the rule, it is true; but the rule exists nevertheless. The mistakes in attempting to evolve the principle have equaled the triumphs of its establishment. The ovaries are not extirpated as of old, and even the appendix is sometimes left in its place to take its chances against the knife of the eager theorist. The everyday practitioner is oftentimes justly constrained, while reading the claims of rival disputants, to thank his stars that he can take the middle ground, and not be sorely tempted to be fashionably progressive and go beyond the range of his common sense. From this point of view, his function as general adviser to his clients is magnified rather than minified, and his hold on the confidence of his patient becomes correspondingly confirmed and safely impartial. If he makes himself worthy of such trust, he deserves to maintain his old-time function. His only interest, then, is to advise as to the best course, and to shift his responsibility only in such cases as circumstances may warrant. He thus becomes the true and rightful conservative element in deciding between inordinate zeal in one direction and absolute safety in another.

The claim is made by the general practitioner that specialism is robbing him of his business. This is certainly true to some extent, and is one of the inevitable results of the survival of the fittest. Taking into account the prevalent practices of patients to consult specialists at first hand and decide for themselves their needs in given cases, there are many chances of making wrong selections.

The ordinary expert is usually a man of one idea, a hobbyist by force of habit and by virtue of his education. He is not inclined to look beyond the special sphere of his work. As a gynecologist, his first thought is of the uterus as the pivotal point of his real interest in the patient. So with the throat man, the neurologist, the ophthalmologist, and the laparotomist. He need not look long in the direction of his favorite trend without finding something important to treat. Thus the part becomes greater than the whole, and so long as given and desirable symptoms exist, the patient is his, and the general practitioner looks on from the outside. When mere business is the consideration, the specialist is tempted to hold on so long as he can, and to force the refinements of his skill into unnecessary directions.

The question with the general practitioner is where such practices are likely to end. Obviously, the line must be drawn somewhere between the greed of the expert and the rights and privileges of the ordinary all-round man. In the treatment of general diseases, the family physician should have some voice in deciding upon cases actually requiring the skill of the specialist. He should certainly be better qualified to do so than the patient himself, and the recognition of relative rights in this respect would do much to combat the spirit of apparent antagonism between both classes of practitioners. If it is conceded that in cases requiring special operations the expert should have full temporary charge of the patient; it should likewise be granted that the general physician should not be blamed for treating the minor ailments of diseased organs when they present themselves in his ordinary line of work. There is ample room and abundant opportunity for both general practitioner and specialist, only the line has not yet been definitely drawn between the two.

MEDICAL NEWS.

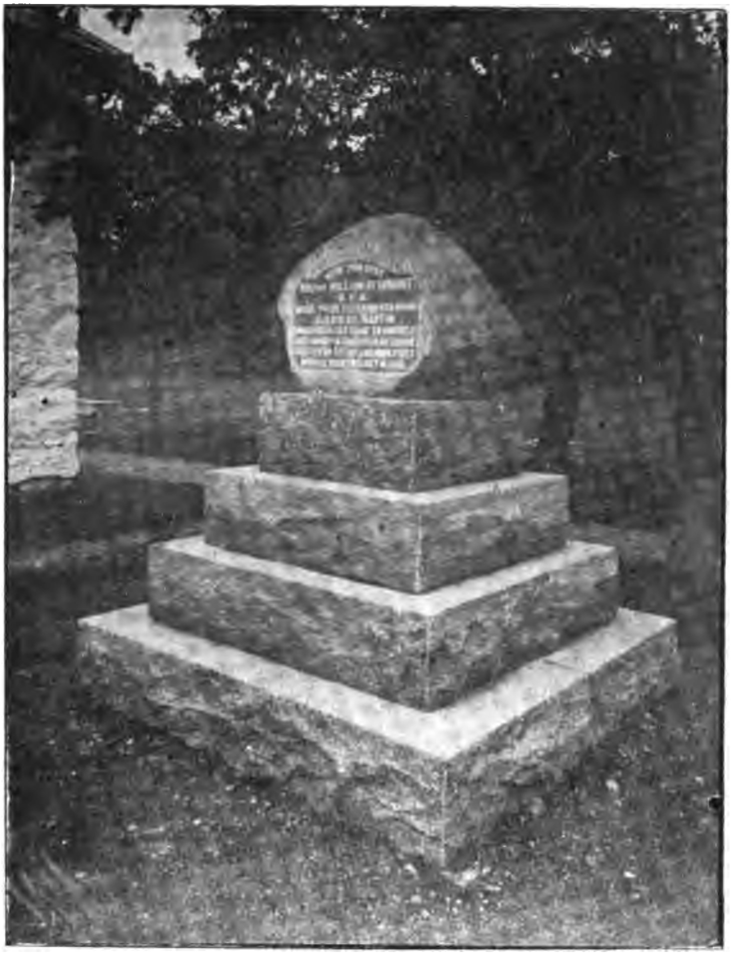
THE STATE SOCIETY MEETING.

THE thirty-seventh annual meeting of the Michigan State Medical Society will be held at Port Huron, June 26 and 27, 1902. The following subjects have been selected for discussion: Section on Medicine—"Diseases of the Kidneys;" Section on Surgery and Ophthalmology—"Surgery of the Kidneys;" Section on Gynecology and Obstetrics—"Abortion and Miscarriage." Papers are confined to the subjects stated and are limited to fifteen minutes each. Titles of papers must be sent to the secretaries of the sections not later than March 1. The addresses of these officers are: Medicine—Doctor Willis S. Anderson, 912 Chamber of Commerce, Detroit; Surgery—Doctor William A. Spitzley, 270 Woodward avenue, Detroit; Gynecology—Doctor Casper K. LaHuis, Kalamazoo. The committee in charge of the pathologic exhibit is desirous of securing specimens, photographs, skiagraphs, et cetera, for this feature of the meeting, and requests members who are willing to loan material for the occasion to communicate with the secretary, Doctor Preston M. Hickey, 32 Adams avenue west, Detroit.

THE BEAUMONT MONUMENT.

THE illustration which accompanies this notice represents the monument erected on Mackinac Island to the memory of the distinguished investigator, William Beaumont, M. D. The view is from the south, facing the straits, and shows a portion of the east end of the stone quarters occupied by Beaumont when serving the government as post surgeon. In the background part of the parade ground is brought in view, and beyond, northward, may be seen the stairway leading to the flagstaff and next elevation. The site of the monument is one hundred and thirty-three feet above Lake Huron—the same height as the parade ground. The dimensions of the monument are as follows:

Height, 7 feet 4 inches.
(1) Base 6 x 6 feet, in two stones, each 6 x 3 feet.
(2) Stone 4 feet 8 inches square; recedes 9 inches.
(3) Stone 3 feet 7 inches square; recedes 7 inches.
(4) Stone 2 feet 7 inches square; recedes 7 inches.
These four stones are each 1 foot 2 inches in thickness.



(5) Boulder 2 feet 6 inches high; face recedes 5 inches, sides and back project over fourth stone.
The three lower stones are Minnesota granite; the two upper ones are Wisconsin granite.

Among the articles deposited in the monument is a copy of the "Beaumont Memorial Number" of The Physician and Surgeon, which was placed in the box by Doctor John R. Bailey, a practician at Mackinac Island since 1854, who conducted the ceremonies.

A NEW COLLEGE AND HOSPITAL BUILDING.

THE Michigan College of Medicine and Surgery and the Detroit Emergency Hospital Association will erect a commodious new building for college and hospital purposes. Plans have already been prepared and excavation for the structure will be commenced on the corner of Porter and Second streets as early as practicable in the spring. The building will be 50 x 130 feet, four stories high, and crowned with a tile roof. The walls, to the sills of the first story, will be of cut limestone, above this line they will be of brown pressed brick with trimmings of white pressed and molded brick and terra cotta. The clinical department, dispensary, laboratories, et cetera, will be located in the basement; the hospital will occupy the wing fronting on the alley which traverses the entire length of the block; and the college will have quarters in that portion of the building forming the corner of Porter and Second streets, the main entrance to which will be on Porter street. The hospital will contain one hundred and ten private rooms, besides several wards. The college apartments will include lecture rooms, class rooms, auditorium, library, and offices for professors. The operating room, which is already being constructed, is designed to be a model in appointment. The anatomical department will be on the fourth floor. It is the intention of the college authorities to have the entire plant equipped with modern improvements.

AN EXPRESSION OF ESTEEM.

DOCTOR T. GAILLARD THOMAS, of New York City, was given a dinner at Sherry's, November 21, 1901, by a number of professional friends and admirers, the occasion being the seventieth anniversary of his birthday. Speeches were made by Reverend Doctor Greer, rector of Saint Bartholomew's Church; Judge Henry E. Howland; Doctor S. Weir Mitchell, of Philadelphia; Doctor William H. Welch, of Baltimore; Doctor G. C. Shattuck, of Boston; and Doctor Thomas. During the course of the latter's remarks expression was given to the following:

* * * You entertain me at a most charming banquet, invite gentlemen whom princes would be proud to own as sponsors, to speak kindly of my past, and you make me happy by friendly glances which shall be forever engraved upon the tablets of my heart! Even this is by no means the full measure of your kindness to me. Deep down in the depths of the heart of every man of proper feeling there lurks the desire to have at the close of his career the approval of the fellows of his guild, be that guild a common trade or one of polite learning. You who have borne to me the relation of brother practitioners and have striven beside me shoulder to shoulder in the keen battle of life; and you, who as students have judged me as teacher, writer, and clinical lecturer, have tonight sealed my past career with the *imprimatur* of your approval! Than this no act of yours could have conferred upon me more real pride and pleasure. Through the whole length of a laborious career which has now reached a half-century; in bright periods and in dark ones, in fair weather and in tempestuous, this approval has ever been the beacon light upon which mine eyes have rested, the prize for which I have striven. Without it all other success would have been like Dead Sea fruit in my hands, and distinction would have been like dross. Thanks to you, this night will, with its pleasant memories, be ever cherished as the proudest era of my existence!

* * * As I stand here I look backward down the dim vista of fifty years and see the disembarkation of a young physician of twenty-one from a coasting schooner from South Carolina, without one acquaintance in this great city and with a purse no more plethoric than that which usually falls to the lot of the son of a clergyman of the Episcopal Church. It is he who now thanks you for celebrating his arrival at three score years and ten. As I look I see dimly, like giants enveloped in a mist, the great physicians of the past—the tall, fine figure of the great Valentine Mott, with his classic features and beautiful face; the learned and eccentric John W. Francis; the courteous Delafield and the erratic Martyn Paine; later, the striking and attractive Willard Parker, John Murray Carnochan and Alonzo Clark; and, later still, Van Buren, Markoe, Barker, Austin Flint, and the brilliant and accomplished John T. Metcalfe. All gone except the last, who, at the age of eighty-three years, lives in dignified retirement, surrounded by every blessing for which man can ask in his declining years! And then my thoughts turn to men of my own period of life. Of these, there were ten young men who clustered as aspirants for place around the College of Physicians and Surgeons and the University Medical College. They were George T. Elliott, Donaghe, Sands, Draper, Bumstead, Agnew, Otis, Loomis, Budd, and myself. Of these ten nine are gone, and I only remain to recall their names. Truly a half-century appears like a long time when estimated by those who have fallen during its passage. But as I continue my retrospective glance more cheerful reminiscences come to my mind in connection with the wonderful changes which this period has wrought in the science and art of medicine. The science of medicine founded by Hippocrates in the little Greek island of Cos, 400 years before Christ, is now 2,300 years old! Did it ever occur to you that during the last half-century, the fifty years in which you and I have been vouchsafed the great privilege of living, there has been done for the advancement and growth of medicine more than was done in the 2,250 years which had preceded them?

* * * I must not detain you longer except for the purpose of thanking you for your exceeding kindness. But how am I to thank you for it, when its very magnitude makes me bankrupt in thanks? In a few moments I shall leave this brilliantly lighted hall and emerge into the darker streets below. When I do so, I shall take the initial steps that lead into that decade of man's life which an inspired writer declares will surely be attended by "labor and sorrow"! Whether my journey in it be long or short, be assured that the memories of this night will serve to lighten that labor and give surcease to that sorrow!

OBITUARY.

Doctor Albert Leary Gihon, Medical Director of the United States navy, retired, died in New York City, November 17, 1901, of cerebral apoplexy. He was born in Philadelphia, September 28, 1833, and received the degree of Doctor of Medicine from the Philadelphia College of Medicine and Surgery in 1853. He filled the professorial chair of chemistry and toxicology in his alma mater for two years, when he abandoned collegiate teaching to become assistant surgeon in the navy. From 1855 to 1895, the date of his retirement because of having reached the age limit of sixty-two years, he experienced a varied and somewhat venturesome career. In November, 1856, he was serving on the "Portsmouth" and assisted in the capture of the Barrier forts at Canton. After a surgeoncy service on various other ships he was transferred to the Brooklyn Navy Hospital in 1860. A year later he was assigned to the brig "Perry," and was on duty when that vessel captured the Confederate privateer "Savannah." He was on board the "Saint Louis" in its famous hunt after the privateers "Alabama," "Florida," and "Georgia." In 1865 he was assigned to duty as senior medical officer at the Portsmonth navy yard. In 1869 he experienced the perils incident to the wreck of the "Idaho" in the big typhoon at Nagasaki. The King of Portugal decorated the doctor with the insignia of Knight of the Military Order of Christ for work in the Portuguese colony of Dilly, in the island of Temor, and on the Portuguese men-of-war "Principe Dom Carlos" and "Sa da Bandeira." He was commissioned surgeon in 1861, medical inspector in 1872, and medical director in 1879. In the later capacity he served at Washington, Mare Island, Brooklyn, and New York. In 1893 he was again transferred to Washington, where he assumed charge of medical headquarters, which position he retained until his retirement from the service two years later. Doctor Gihon was the author of many works on medicine and travel, all of which bear the impress of an accomplished writer. He was the designer of the model hospital ship exhibited at the Centennial Exposition in 1876, as well as of an ambulance cot approved and adopted by the navy. He had a congenial disposition and enjoyed friends galore.

* * *

Sir William MacCormac, baronet, of London, England, died at Bath, December 4, 1901, of an affection of the heart. Sir William was a native of Ireland, having been born in Belfast, January 17, 1836. He received the degree of Master of Arts at the Queen's University of Ireland, in 1858. In 1857 he became a member of the Royal College of Surgeons of England, and in 1864 a Fellow of the Royal College of Surgeons of Ireland, obtaining the latter title from the English College in 1871. He was created a M. Ch. of the Queen's University of Ireland (*honoris causa*) in 1879, and a D. Sc. in 1882, at which time he won the gold medal. Later he was a member of the senate and examiner in surgery at that institution, and surgeon and subsequently consulting surgeon to the Belfast Royal Hospital. For twenty years he lectured on surgery at Saint Thomas's Hospital, and at the time of his demise was consulting surgeon and emeritus lecturer on clinical surgery to the French Hospital, the Italian Hospital, and the Queen Charlotte's Lying-in Hospital, of London. He enjoyed various other hospital and college connections, and was three times elected president of the Royal College of Surgeons of England. During the Franco-Prussian war in 1870–71, he was surgeon-in-chief of the Anglo-American ambulance corps. He likewise experienced service in the Turko-Servian war in 1876. In 1881 he was Honorary Secretary-General of the International Medical Congress which convened at London, and in recognition of his services in that capacity Queen Victoria honored him with knighthood. On the occasion of Her Majesty's Jubilee in 1897, she created the doctor a baronet, and the same year he was appointed surgeon-in-ordinary to his Royal Highness, the Prince of Wales. In the autumn of 1898 he was made a Knight Commander of the Royal Victorian Order, and on the occasion of the Jubilee of the Saint Petersburg Academy of Medicine in the winter of the same year he was elected an honorary member of that body. Early in the Boer war he was dispatched to South Africa to render service as a civil consulting surgeon, and by promptly fulfilling the obligations of this charge won the encomiums of the troops and the army medical department. Sir William was burdened with titles. He bore the reputation of probably having the largest cosmopolitan list of titular distinctions ever attained by medical man. Besides the numerous honors accorded him in England his attainments received recognition in America, Bavaria, Denmark, Egypt, France, Germany, Italy, Portugal, and Sweden. He was a well-known writer and the author of many works, notably "Antiseptic Surgery—Its Principles and Practice," which was translated into French and Russian, and "Notes and Recollections of an Ambulance Surgeon," which was translated into Dutch, French, German, Italian, Japanese, and Russian. He was a contributor to Heath's "Surgery," Treves's "Surgery," and Quain's "Dictionary of Medicine."

* * *

DOCTOR DONALD SAINT CLAIR CAMPBELL, of Detroit, died of typhoid fever December 17, 1901, after an illness lasting three weeks. He was born in Glengarty, Ontario, February 18, 1857, and graduated from the medical department of the University of Michigan in 1877. Subsequently the doctor pursued special clinical study in Edinburgh, London, and New York. In 1883 he was a member of the relief expedition which was sent to search for Lieutenant Greeley and his party of Arctic explorers. He afterward entered practice in New York, but in 1885 located in Detroit, where he gave special attention to nose, throat, and lung diseases. He was married in 1880 and is survived by a widow and two children. The funeral obsequies were conducted under the auspices of Damascus Commandery, Knights Templar.

* * *

DOCTOR DUNCAN MCLEOD, ex-health officer and well-known physician of Detroit, died at his home on West Canfield Avenue, December 30, 1901. The doctor had been in ill health for over a year, but the immediate cause of his death was pleuro-pneumonia accompanied by hemorrhage. He was born in Cape Breton, Nova Scotia, July 3, 1848. Two years later his parents moved to Hamilton, Ontario, where he received his early education. In 1870 he entered Trinity University, and soon after graduating therefrom (1873) located in Detroit. In 1878 he was appointed a member-at-large of the board of health for the eastern district of the city, and one year later he was installed health officer of Detroit. In this capacity he introduced several sanitary innovations of importance, chief among which was the house-to-house inspection and in conjunction with the board of health he framed some sanitary measures of value. In 1880 he was called to the professorship of hygiene and sanitary science in the Michigan College of Medicine and two years subsequently his professional title included materia medica and therapeutics. When the amalgamation of the Michigan College of Medicine and the Detroit Medical College was effected in 1883 the doctor was retained on the teaching force of the product of the union, the Detroit College of Medicine, and continued to impart instruction in the departments mentioned until 1893, when he resigned to enter upon the duties of health commissioner. Owing to his enfeebled condition Doctor McLeod had not been engaged in active practice for some time.

Doctor Emily Augusta Benn, of Ypsilanti, died of apoplexy in that city January 2, 1902. She had been ailing for more than a year, but death was unexpected. The doctor was in the forty-second year of her age, having been born April 2, 1860. She was a native of Canada, but her parents emigrated to Michigan while she was still a child, and her early training was received in the public schools of Saginaw. In 1883 she received the degree of Bachelor of Arts from the University of Michigan, and afterward taught in the Saginaw High School (1884–5), the Pontiac High School (1885–7), and the East Saginaw High School (1887–8). Having decided to abandon pedagogy for medicine she returned to the University of Michigan and pursued the course of study leading to the degree of Doctor of Medicine, which she received in 1892. She at once began practice in Ypsilanti, and throughout her medical career enjoyed the reputation of being a conscientious and cultured member of the profession. Doctor Benn was identified with the Methodist Church, the Maccabee order, and the medical society of the county in which she practiced. Her remains were interred at Saginaw.

MINOR INTELLIGENCE.

The Commissioners of the District of Columbia have appointed Doctor P. M. Rixey a member of the board of directors of the Columbia Hospital for Women, at Washington, vice Doctor Louis W. Ritchie, deceased.

The next issue of The Physician and Surgeon will mark the inception of a new feature in the make-up of the journal. Ten departments, representing the world's progress in the various branches of medicine and surgery, will be added. Twelve specialists will conduct them.

The annual meeting of the Calhoun County Medical Society was held at Albion, December 3, 1901. Doctor Reuben Peterson, of the University of Michigan, read a paper entitled "Vulvo-Vaginitis in Young Children." A banquet was held at the conclusion of the discussional session.

The Milwaukee Postgraduate Medical School and Polyclinic recently filed articles of incorporation. The incorporators are Doctors William H. Earles, Walter H. Nielson, and Warren B. Hill. The new institution, which has a capital stock of $25,000, will be operated in connection with the medical school of that city.

Caro, Michigan, was the place selected for the holding of the fiftieth sanitary convention under the auspices of the Michigan State Board of Health. The dates of the meetings were January 21 and 22, 1902. Papers and discussions were contributed on the following subjects: (1) School Sanitation; (2) Home Sanitation; (3) Restriction and Prevention of Consumption; (4) Sewerage; (5) Water Supply; (6) Hygiene of the Home; (7) Question Box, each session.

The Lenawee County Medical Society was recently organized at Adrian by the election of the following officers: President, Doctor Daniel Todd, of Adrian; vicepresident, Doctor George Howell, of Tecumseh; secretary-treasurer, Doctor David L. Treat, of Adrian. The first scientific meeting was held at the county seat November 5, 1901. The program announced a paper entitled "Progressive Pernicious Anemia," by Doctor N. D. Yale, of Deerfield, and one on "Pneumonia," by Doctor Clifford Kirkpatrick, of Adrian.

THE trustees of the asylum for incurable insane located at Bartonville, Illinois, have elected Doctor George A. Zellar, a former resident of Peoria, but now a surgeon in the army operating in the Philippines, superintendent of that institution vice Doctor F. W. Winslow, who recently died.

THE fifth general conference of health officials in Michigan was held at Ann Arbor, Thursday and Friday, November 21 and 22, 1901, under the auspices of the Michigan State Board of Health. The sessions, four in number, were held in the Hygienic Laboratory of the University of Michigan, where the address of welcome was delivered by President James B. Angell. The program contained a long list of papers dealing with questions pertaining to the public health.

DOCTOR MARY WALKER, of Washington, District of Columbia, the woman who wears the garb of man, recently came within an ace of being mobbed in a railroad coach at Syracuse, New York, on account of some disparaging remarks concerning President McKinley. She was on the verge of being knocked down when her sex was discovered. Only a reprimand followed on that occasion, but now rumor says that Mary will lose her pension in consequence of her prattling.

THE graduating exercises of Saint Mary's Training School for Nurses were held at Saint Mary's Hospital, Detroit, Thursday, November 14, 1901, at 8 o'clock P. M. Right Reverend John S. Foley offered prayer, Doctor David Inglis delivered an address, and Doctor Stanley G. Miner presented diplomas to the following class, after which Doctor William M. Donald presented badges to the newly-made nurses: Miss Mary Urban, Miss Margaret Blue, Miss Minnie Hart, Miss Ella Moran, Miss Mary Mace, Miss Matilda Devereaux, Miss Jennie Clark.

RECENT PUBLICATIONS.

REVIEWS.

SUNSHINE AND SHADOWS OF THE PHYSICIAN.*

IN this little book is a collection of choice sentiments for the leisure hour. The author gives evidence of broad, general as well as current, reading, and shows true refinement in the adaptation he makes of it.

*By William Lane Lowder, B. S., M. D. Presswork by R. H. Carothers, Louisville, Kentucky.

DEFORMITIES OF THE FACE.*

UNDER this title are presented the Mütter Lectures of the College of Physicians of Philadelphia for 1900, delivered by the author, together with a supplementary chapter on the "Reconstruction of Syphilitic Noses." It is a small volume, but nevertheless a real contribution to the art of surgery of no mean merit.

*By John B. Roberts, A. M., M. D., Professor of Surgery in the Philadelphia Polyclinic; Surgeon to the Methodist Hospital. The Philadelphia Medical Publishing Company, Philadelphia, 1901.

OUT OF THE PIGEON HOLES.*

UNDER the above title the author has published a motley collection of essays, tales and poems of true literary merit. Taken in hand at the right time, this book has in it to give many an hour's pleasure and profit.

*By E. S. Goodhue, M. D., author of "Verses From the Valley," "Beneath Hawaiian Palms and Stars," "Salt." The George F. Butler Publishing Company, Alma, Michigan.

OBSTETRIC DIAGNOSIS AND TREATMENT.*

THIS work includes both text and lithographic illustrations bearing upon the physiology, dietetics, pathology and treatment of pregnancy, labor, and the puerperium. It combines in one cheap although beautiful volume an epitome of obstetrics and an atlas of its pathology and treatment.

* Saunders's Medical Hand-Atlases Series. By Doctor O. Shaeffer, of Heidelberg. From the second revised German edition. Edited by J. Clifton Edgar, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 other illustrations, and 317 pages of text. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, $3.00 net.

OPHTHALMOSCOPY.*

AS in the other volumes of this series the drawings and lithographs constitute the greatest merit of the work. This volume gives in addition, however, valuable text, as the description of the ophthalmoscope, and on the examination both in the erect image and by the indirect method, skiascopy, how to conduct an ophthalmoscopic examination, normal eyeground and pulsation phenomena. The plates are exceptionally fine.

*Saunders's Medical Hand-Atlases Series. By Professor Doctor O. Haab, Director of the Eye Clinic in Zurich. From the third revised and enlarged German edition. Edited by George E. de Schweinitz, Professor of Ophthalmology, Jefferson Medical College, Philadelphia. With 152 colored lithographic illustrations and 85 pages of text. Philadelphia and London: W. B. Saunders & Company, 1901. Price, $3.00 net.

HYGIENE OF TRANSMISSIBLE DISEASES.*

THIS work is not pretended to be a treatise on the general subject of hygiene, but, as its title indicates, it does consider in a most excellent manner the causation, modes of dissemination and methods of prevention of the preventable specific diseases. It takes up first the predisposing and exciting causes of such diseases in general and then treats of special diseases separately. Section III deals with prophylaxis in general against infectious diseases. Section IV treats of the precautions in the management of communicable diseases, and Section V of quarantine. Altogether it is the most scientific presentation of this subject we have seen.

* By A. C. Abbott, M. D., Professor of Hygiene and Bacteriology, University of Pennsylvania. Third edition, revised and enlarged. Octavo, 351 pages, with numerous illustrations. Cloth, $2.50 net. W. B. Saunders & Company, Philadelphia and London.

NERVOUS SYSTEM.*

If there is any one branch of the science of medicine that needs elucidation more than another it is the one to which the author of this work has applied himself. Both plates and texts cover the following topics: Morphology, development and structure of the nervous system, its anatomy and physiology and the pathology and treatment of the diseases of it. A few remarks have been added also on autopsy technique and the microscopic examination of the nervous system. The work is original to a large degree and of great value to the student of this unfamiliar subject.

* Saunders's Medical Hand-Atlases Series. By Professor Dr. Chr. Jakob, of Erlangen. From the second revised German edition. Edited by Edward D. Fisher, M. D., Professor of the Diseases of the Nervous System, University and Bellevue Medical College, New York. With 83 plates and copious text. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, $3.50 net.

PROGRESSIVE MEDICINE—VOLUME III, 1901.*

This excellent volume begins with a review and résumé of the world's recent literature upon diseases of the thorax and its viscera, including the heart, lungs and blood-vessels, by William Ewart, takes up the subjects of dermatology and syphilis by Gottheil, continues with diseases of the nervous system by Spiller, and concludes with a survey of the newer thought on the subject of obstetrics by Norris. The articles on pneumonia and tuberculosis, on cerebral tumor and abscess, and on eclampsia, are especially worthy of mention.

* A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 428 pages, 16 illustrations. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers & Company, Philadelphia and New York.

SURGERY.*

At first sight this thick and rather loosely bound volume does not appeal to us. The whole subject is treated within two covers, to be sure, but the book is unwieldy. Inside, however, criticism is disarmed. Both type and plates are attractive. Better than these, though, is the well-written subject-matter, from the pens of so many eminent American authors. This method of book-making, especially about some subjects, gives the best results. The fortunate choice of authors is the problem. This volume is the product of a second revision, and the addition of new matter on Blood Examination applied to Surgery, and several illustrations. It is well adapted to the needs of students and of the general practitioner of Surgery.

* Edited by Roswell Park, M. D., Professor of Surgery in the University of Buffalo, New York. New, third edition, in one royal octavo volume of 1350 pages, with 692 engravings and 64 full-page plates in colors and monochrome. Cloth, $7.00 net; leather, $8.00 net. Lea Brothers & Company, Philadelphia and New York.

LABOR AND OPERATIVE OBSTETRICS.*

THIS work consists of two parts. Part A treats of the act of parturition considered from the standpoint of the practical obstetrician. The various positions of the fetus, favorable of eutocia and productive of dystocia, are both discussed and illustrated. Part B presents the surgery of obstetrics. Under group I are considered the obstetric operations on the fetus and ovum. Obstetric operations on the mother are given in group II. This volume should be a great help to the student of this subject.

* Saunders's Medical Hand-Atlases Series. By Doctor O. Shaeffer, of Heidelberg. From the fifth revised German edition. Edited by J. Clifford Edgar, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, $2.00 net.

INTERNATIONAL CLINICS.*

THIS volume contains eight articles on therapeutics, six on medicine, four on neurology, two on surgery, two on obstetrics, one each on pediatrics and pathology, two on diseases of the eye, one on laryngology, and seventeen pages of new medical words, pronounced and defined. Of special value may be mentioned "Surgical Analgesias by Injection of Cocain into the Spinal Column," by Treffier, of Paris; "The Treatment of Puerperal Eclampsia by Saline Diuretic Infusion," by Robert Jardine; "Smallpox, with Particular Reference to the Prevalent Epidemic," by Schamberg; "Some Suggestions as to the Mechanism of Mental Operations," by Ramon v Cajal, and "Resources in Narrow Pelvis," by Buist. The publishers of this work have succeeded in putting before the medical public a series of exceedingly valuable books for a very little money. This volume is no exception to the entire series.

* Volume II, eleventh series, 1901. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, and nine others. J. B. Lippincott Company, Philadelphia.

PRACTICAL SURGERY.*

THIS volume may be supposed to be an epitome of surgery, as conceived by one of the most erudite and widely-experienced of the profession in America. Surely the author's prominence in medical literature among his fellows, and in the world at large, entitle his last and largest work to unusual consideration and confidence. The work has evidently been prepared from the standpoint of the general practitioner of surgery. Military and intestinal surgery are given special attention, owing to their emergency character, and relation to first-hand care. The author has seen fit to draw largely from his own experimental and other literary productions for the purposes of this book. It is impossible and unnecessary in this case to go over all the details of this work. It may be taken as the present conception of the art of general surgery. The author has summed up his vast experience, and modified or enriched it by the views of others, chiefly German surgeons, to whom he has given credit.

* By Nicholas Senn, M. D., Ph. D., LL. D., Professor of Surgery in Rush Medical College, Chicago. W. B. Saunders & Company, Philadelphia and London, 1901. Cloth, $6.00 net.

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